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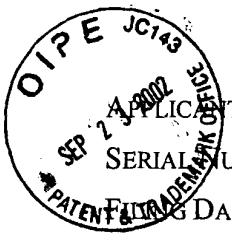
Attorney Docket No.: 21402-211 (Cura 511)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS:	Malyankar et al.		
SERIAL NUMBER:	10/015,115	EXAMINER:	Not Yet Assigned
FILING DATE:	November 13, 2001	ART UNIT:	Not Yet Assigned
FOR:	PROTEINS, POLYNUCLEOTIDES ENCODING THEM AND METHODS OF USING THE SAME		

Commissioner for Patents and Trademarks
WASHINGTON, D.C. 20231

STATEMENT IN SUPPORT OF COMPUTER READABLE FORM SUBMISSION UNDER 37 C.F.R. § 1.821(f)

I hereby state that the content of the paper and computer readable forms of the Sequence Listing, submitted in the above-identified application in accordance with 37 C.F.R. § 1.821(c) and 1.821(e), respectively, are the same. No new matter has been added.

Respectfully submitted,

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Dated: September 23, 2002

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SEQUENCE LISTING

<110> Malyankar, Uriel M
Shenoy, Suresh G
Spytek, Kimberly A
Zerhusen, Bryan D
Patturajan, Meera
Guo, Xiaojia
Kekuda, Ramesha
Gangolli, Esha A
Shimkets, Richard A
Taupier, Raymond J
Li, Li
Padigaru, Muralidhara

<120> Proteins, Polynucleotides Encoding Them and Methods of Using the Same

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Thr Pro Val Leu Pro Trp Leu Cys Thr Leu Ser Pro Lys Thr Leu Leu
        35                  40                  45

Xaa His His Thr Ser Ser Arg Lys Pro Pro Leu Thr Val His Arg Phe
    50                  55                  60

Pro Val Gly Ala Gly Cys Leu Leu Gly Leu Pro Glu Ala Pro Gly Leu
65                  70                  75                  80

Pro His Leu Ala Thr Thr Leu Pro Ser Ser Leu Cys Trp Val Pro His
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Gly Xaa Gly Gly Gly Leu Ile Xaa Gly Xaa Leu Cys Phe Leu Ser Ala
            100                 105                 110

Ala Ser Arg Gly His Ala Met Thr Leu Glu Gly Leu Tyr Leu Ala Arg
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Gly Pro Leu Ala Arg Leu Leu Leu Ala Trp Ser Ala Leu Leu Cys Met
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Ala Gly Gly Gln Gly Arg Trp Asp Gly Ala Leu Glu Ala Ala Gly Pro
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Gly Arg Val Arg Arg Arg Gly Ser Pro Gly Ile Leu Gln Gly Pro Asn
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Val Cys Gly Ser Arg Phe His Ala Tyr Cys Cys Pro Gly Trp Arg Thr
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Phe Pro Gly Arg Ser Gln Cys Val Val Pro Ile Cys Arg Arg Ala Cys
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Gly Glu Gly Phe Cys Ser Gln Pro Asn Leu Cys Thr Cys Ala Asp Gly
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Thr Leu Ala Pro Ser Cys Gly Val Ser Arg Gly Ser Gly Cys Ser Val
225                 230                 235                 240

Ser Cys Met Asn Gly Gly Thr Cys Arg Gly Ala Ser Cys Leu Cys Gln
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Lys Gly Tyr Thr Gly Thr Val Cys Gly Gln Pro Ile Cys Asp Arg Gly
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Cys His Asn Gly Gly Arg Cys Ile Gly Pro Asn Arg Cys Ala Cys Val
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Cys Phe Gly Gln Val Gly Pro Glu Gly Cys Gln His Gln Leu Thr Gly
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Val Gly Ser Phe His Cys Arg Cys Pro Val Gly His Arg Leu Ser Asp
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Ile Cys Glu Gly Gly Glu Cys Thr Asn Thr Val Ser Ser Tyr Phe Cys
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Lys Cys Pro Pro Gly Phe Tyr Thr Ser Pro Asp Gly Thr Leu His Gly
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Gln Ser Arg Ala Gly Ala Cys Phe Ser Val Leu Phe Gly Gly Arg Cys
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Arg Gly Arg Cys Trp Ala Ala Gly Pro Val Pro Glu Leu Cys Pro Pro
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Leu Pro Gly His Pro Gly Leu Phe Pro Gly Leu Leu Gly Phe Gly Ser
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Gly Thr Ala Thr Leu Asn Gln Thr Ile Asp Ile Cys Arg His Phe Thr
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Asn Leu Cys Leu Asn Gly Arg Cys Leu Pro Thr Pro Ser Ser Tyr Arg
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Cys Glu Cys Asn Val Gly Tyr Thr Gln Asp Val Arg Gly Glu Cys Ile
595 600 605

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Asn Ile Pro Gly Thr Tyr His Cys Arg Cys Tyr Pro Gly Phe Gln Ala
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Thr Pro Thr Arg Gln Ala Cys Val Asp Val Asp Glu Cys Ile Val Ser
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Gly Gly Leu Cys His Leu Gly Arg Cys Val Asn Thr Glu Gly Ser Phe
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Gln Cys Val Cys Asn Ala Gly Phe Glu Leu Ser Pro Asp Gly Lys Asn
675 680 685

Cys Val Asp His Asn Glu Cys Ala Thr Ser Thr Met Cys Val Asn Gly
690 695 700

Val Cys Leu Asn Glu Asp Gly Ser Phe Ser Cys Leu Cys Lys Pro Gly
705 710 715 720

Phe Leu Leu Ala Pro Gly Gly His Tyr Cys Met Asp Ile Asp Glu Cys
725 730 735

Gln Thr Pro Gly Ile Cys Val Asn Gly His Cys Thr Asn Thr Glu Gly
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755 760 765

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Glu Lys Gly Ser Cys Ala Arg Pro Phe Pro Gly Thr Val Thr Lys Ser
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Asn Gly Trp Cys Gln Asn Ser Pro Gly Ser Tyr Ser Cys Ser Cys Pro
            900                 905                 910

Pro Gly Phe His Phe Trp Gln Asp Thr Glu Ile Cys Lys Asp Val Asp
        915                 920                 925

Glu Cys Leu Ser Ser Pro Cys Val Ser Gly Val Cys Arg Asn Leu Ala
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Gly Ser Tyr Thr Cys Lys Cys Gly Pro Gly Ser Arg Leu Asp Pro Ser
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Gln Glu Ser Arg Cys Glu Val Asn Leu Gln Gly Ala Ser Leu Arg Ser
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Glu Cys Cys Ala Thr Leu Gly Ala Ala Trp Gly Ser Pro Cys Glu Arg
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Cys Glu Ile Asp Pro Ala Cys Ala Arg Gly Phe Ala Arg Met Thr Gly
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Val Thr Cys Asp Asp Val Asn Glu Cys Glu Ser Phe Pro Gly Val Cys
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Pro Asn Gly Arg Cys Val Asn Thr Ala Gly Ser Phe Arg Cys Glu Cys
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Pro Glu Gly Leu Met Leu Asp Ala Ser Gly Arg Leu Cys Val Asp Val
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Arg Leu Glu Pro Cys Phe Leu Arg Trp Asp Glu Asp Glu Cys Gly Val
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Thr Leu Pro Gly Lys Tyr Arg Met Asp Val Cys Cys Cys Ser Ile Gly
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Ala Val Trp Gly Val Glu Cys Glu Ala Cys Pro Asp Pro Glu Ser Leu
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Glu Phe Ala Ser Leu Cys Pro Arg Gly Leu Gly Phe Ala Ser Arg Asp
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Phe Leu Ser Gly Arg Pro Phe Tyr Lys Asp Val Asn Glu Cys Lys Val
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Phe Pro Gly Leu Cys Thr His Gly Thr Cys Arg Asn Thr Val Gly Ser
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Phe His Cys Ala Cys Ala Gly Gly Phe Ala Leu Asp Ala Gln Glu Arg
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Gln Gly Thr Cys Val Asn Thr Pro Gly Ser Phe Glu Cys Glu Cys Phe
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Pro Gly Tyr Glu Ser Gly Phe Met Leu Met Lys Asn Cys Met Asp Val
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Asp Glu Cys Ala Arg Asp Pro Leu Leu Cys Arg Gly Gly Thr Cys Thr
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Thr Ala Lys Gly Thr Ala Cys Glu Asp Ile Asp Glu Cys Ser Leu Ser
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Asp Gly Leu Cys Pro His Gly Gln Cys Val Asn Val Ile Gly Ala Phe
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Gln Cys Ser Cys His Ala Gly Phe Gln Ser Thr Pro Asp Arg Gly Ala
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Thr Ser Ala Ser Cys Pro Thr Glu Gly His Val Gln Val Val Leu Gly
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Pro Gly Glu Gln Met Cys Thr Gly Trp Ser Ile Arg Ala Lys Leu Ser
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Pro Arg Val Cys Asp Gln Gly His Cys Thr Asn Met Pro Gly Gly His
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Arg Cys Leu Cys Tyr Asp Gly Phe Met Ala Thr Pro Asp Met Arg Thr
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Cys Val Asp Val Asp Glu Cys Asp Leu Asn Pro His Ile Cys Leu His
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Gly Asp Cys Glu Asn Thr Lys Gly Ser Phe Val Cys His Cys Gln Leu
   1410                1415                1420

Gly Tyr Met Val Arg Lys Gly Ala Thr Gly Cys Ser Asp Val Asp Glu
1425                1430                1435                1440

Cys Glu Val Gly Gly His Asn Cys Asp Ser His Ala Ser Cys Leu Asn
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Trp Asn Arg Pro Cys Glu Ala Cys Pro Thr Pro Ile Ser Pro Asp Tyr
1845 1850 1855

Gln Ile Leu Cys Gly Asn Gln Ala Pro Gly Phe Leu Thr Asp Ile His
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Thr Gly Lys Pro Leu Asp Ile Asp Glu Cys Gly Glu Ile Pro Ala Ile
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Cys Ala Asn Gly Ile Cys Ile Asn Gln Ile Gly Ser Phe Arg Cys Glu
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His Ala Tyr Cys Cys Pro Gly Trp Arg Thr Phe Pro Gly Arg Ser Gln
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Cys Val Val Pro Ile Cys Arg Arg Ala Cys Gly Glu Gly Phe Cys Ser
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Gln Pro Asn Leu Cys Thr Cys Ala Asp Gly Thr Leu Ala Pro Ser Cys
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Asp Tyr Arg Ala Gly Ala Cys Phe Ser Val Leu Phe Gly Gly Arg Cys
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Arg Gly Ser Asn Glu Phe Gln Gln Leu Cys Ala Gln Arg Leu Pro Leu
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Leu Pro Gly His Pro Gly Leu Phe Pro Gly Leu Leu Gly Phe Gly Ser
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Asn Gly Met Gly Pro Pro Leu Gly Pro Ala Arg Leu Asn Pro His Gly
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Ser Asp Ala Arg Gly Ile Pro Ser Leu Gly Pro Gly Asn Ser Asn Ile
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Gly Thr Ala Thr Leu Asn Gln Thr Ile Asp Ile Cys Arg His Phe Thr
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Asn Leu Cys Leu Asn Gly Arg Cys Leu Pro Thr Pro Ser Ser Tyr Arg
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Cys Glu Cys Asn Val Gly Tyr Thr Gln Asp Val Arg Gly Glu Cys Ile
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Ser Phe Arg Cys Gln Cys Leu Gly Gly Leu Ala Val Gly Thr Asp Gly
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Gly Leu Gly Ile Thr Thr Asp Gly Arg Asp Ile Asn Glu Cys Ala Leu
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Asp Pro Glu Val Cys Ala Asn Gly Val Cys Glu Asn Leu Arg Gly Ser
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Tyr Arg Cys Val Cys Asn Leu Gly Tyr Glu Ala Gly Ala Ser Gly Lys
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Trp Asp Gly Ala Leu Glu Ala Ala Gly Pro Gly Arg Val Arg Arg Arg
         35                  40                  45

Gly Ser Pro Gly Ile Leu Gln Gly Pro Asn Val Cys Gly Ser Arg Phe
     50                  55                  60
```

```
His Ala Tyr Cys Cys Pro Gly Trp Arg Thr Phe Pro Gly Arg Ser Gln
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Cys Val Val Pro Ile Cys Arg Arg Ala Cys Gly Glu Gly Phe Cys Ser
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Gln Pro Asn Leu Cys Thr Cys Ala Asp Gly Thr Leu Ala Pro Ser Cys
            100                 105                 110

Gly Val Ser Arg Gly Ser Gly Cys Ser Val Ser Cys Met Asn Gly Gly
        115                 120                 125

Thr Cys Arg Gly Ala Ser Cys Leu Cys Gln Lys Gly Tyr Thr Gly Thr
    130                 135                 140

Val Cys Gly Gln Pro Ile Cys Asp Arg Gly Cys His Asn Gly Gly Arg
145                 150                 155                 160

Cys Ile Gly Pro Asn Arg Cys Ala Cys Val Tyr Gly Phe Met Gly Pro
                165                 170                 175

Gln Cys Glu Arg Asp Tyr Arg Thr Gly Pro Cys Phe Gly Gln Val Gly
            180                 185                 190

Pro Glu Gly Cys Gln His Gln Leu Thr Gly Leu Val Cys Thr Lys Ala
        195                 200                 205

Leu Cys Cys Ala Thr Val Gly Arg Ala Trp Gly Leu Pro Cys Glu Leu
    210                 215                 220

Cys Pro Ala Gln Pro His Pro Cys Arg Arg Gly Phe Ile Pro Asn Ile
225                 230                 235                 240

His Thr Gly Ala Cys Gln Asp Val Asp Glu Cys Gln Ala Val Pro Gly
                245                 250                 255

Leu Cys Gln Gly Gly Ser Cys Val Asn Met Val Gly Ser Phe His Cys
            260                 265                 270

Arg Cys Pro Val Gly His Arg Leu Ser Asp Ser Ser Ala Ala Cys Glu
        275                 280                 285

Asp Tyr Asp Glu Cys Ser Thr Ile Pro Gly Ile Cys Glu Gly Gly Glu
    290                 295                 300

Cys Thr Asn Thr Val Ser Ser Tyr Phe Cys Lys Cys Pro Pro Gly Phe
305                 310                 315                 320

Tyr Thr Ser Pro Asp Gly Thr Leu His Gly Gln Ser Arg Ala Gly Ala
                325                 330                 335

Cys Phe Ser Val Leu Phe Gly Gly Arg Cys Ala Gly Asp Leu Ala Gly
            340                 345                 350

His Tyr Thr Arg Arg Gln Cys Cys Cys Asp Arg Gly Arg Cys Trp Ala
        355                 360                 365
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Ala Gly Pro Val Pro Glu Leu Cys Pro Pro Arg Gly Ser Asn Glu Phe
    370                 375                 380

Gln Gln Leu Cys Ala Gln Arg Leu Pro Leu Leu Pro Gly His Pro Gly
385                 390                 395                 400

Leu Phe Pro Gly Leu Leu Gly Phe Gly Ser Asn Gly Met Gly Pro Pro
                405                 410                 415

Leu Gly Pro Ala Arg Leu Asn Pro His Gly Ser Asp Ala Arg Gly Ile
            420                 425                 430

Pro Ser Leu Gly Pro Gly Asn Ser Asn Ile Gly Thr Ala Thr Leu Asn
        435                 440                 445

Gln Thr Ile Asp Ile Cys Arg His Phe Thr Asn Leu Cys Leu Asn Gly
    450                 455                 460

Arg Cys Leu Pro Thr Pro Ser Ser Tyr Arg Cys Glu Cys Asn Val Gly
465                 470                 475                 480

Tyr Thr Gln Asp Val Arg Gly Glu Cys Ile Asp Val Asp Glu Cys Thr
                485                 490                 495

Ser Ser Pro Cys His His Gly Asp Cys Val Asn Ile Pro Gly Thr Tyr
            500                 505                 510

His Cys Arg Cys Tyr Pro Gly Phe Gln Ala Thr Pro Thr Arg Gln Ala
        515                 520                 525

Cys Val Asp Val Asp Glu Cys Ile Val Ser Gly Gly Leu Cys His Leu
    530                 535                 540

Gly Arg Cys Val Asn Thr Glu Gly Ser Phe Gln Cys Val Cys Asn Ala
545                 550                 555                 560

Gly Phe Glu Leu Ser Pro Asp Gly Lys Asn Cys Val Asp His Asn Glu
                565                 570                 575

Cys Ala Thr Ser Thr Met Cys Val Asn Gly Val Cys Leu Asn Glu Asp
            580                 585                 590

Gly Ser Phe Ser Cys Leu Cys Lys Pro Gly Phe Leu Leu Ala Pro Gly
        595                 600                 605

Gly His Tyr Cys Met Asp Ile Asp Glu Cys Gln Thr Pro Gly Ile Cys
    610                 615                 620

Val Asn Gly His Cys Thr Asn Thr Glu Gly Ser Phe Arg Cys Gln Cys
625                 630                 635                 640

Leu Gly Gly Leu Ala Val Gly Thr Asp Gly Arg Val Cys Val Asp Thr
                645                 650                 655

His Val Arg Ser Thr Cys Tyr Gly Ala Ile Glu Lys Gly Ser Cys Ala
            660                 665                 670
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Arg Pro Phe Pro Gly Thr Val Thr Lys Ser Glu Cys Cys Cys Ala Asn
        675                 680                 685

Pro Asp His Gly Phe Gly Glu Pro Cys Gln Leu Cys Pro Ala Lys Asp
    690                 695                 700

Ser Ala Glu Phe Gln Ala Leu Cys Ser Ser Gly Leu Gly Ile Thr Thr
705                 710                 715                 720

Asp Gly Arg Asp Ile Asn Glu Cys Ala Leu Asp Pro Glu Val Cys Ala
                725                 730                 735

Asn Gly Val Cys Glu Asn Leu Arg Gly Ser Tyr Arg Cys Val Cys Asn
            740                 745                 750

Leu Gly Tyr Glu Ala Gly Ala Ser Gly Lys Asp Cys Thr Asp Val Asp
        755                 760                 765

Glu Cys Ala Leu Asn Ser Leu Leu Cys Asp Asn Gly Trp Cys Gln Asn
    770                 775                 780

Ser Pro Gly Ser Tyr Ser Cys Ser Cys Pro Pro Gly Phe His Phe Trp
785                 790                 795                 800

Gln Asp Thr Glu Ile Cys Lys Asp Val Asp Glu Cys Leu Ser Ser Pro
                805                 810                 815

Cys Val Ser Gly Val Cys Arg Asn Leu Ala Gly Ser Tyr Thr Cys Lys
            820                 825                 830

Cys Gly Pro Gly Ser Arg Leu Asp Pro Ser Gly Thr Phe Cys Leu Asp
        835                 840                 845

Ser Thr Lys Gly Thr Cys Trp Leu Lys Ile Gln Glu Ser Arg Cys Glu
    850                 855                 860

Val Asn Leu Gln Gly Ala Ser Leu Arg Ser Glu Cys Cys Ala Thr Leu
865                 870                 875                 880

Gly Ala Ala Trp Gly Ser Pro Cys Glu Arg Cys Glu Ile Asp Pro Ala
                885                 890                 895

Cys Ala Arg Gly Phe Ala Arg Met Thr Gly Val Thr Cys Asp Asp Val
            900                 905                 910

Asn Glu Cys Glu Ser Phe Pro Gly Val Cys Pro Asn Gly Arg Cys Val
        915                 920                 925

Asn Thr Ala Gly Ser Phe Arg Cys Glu Cys Pro Glu Gly Leu Met Leu
    930                 935                 940

Asp Ala Ser Gly Arg Leu Cys Val Asp Val Arg Leu Glu Pro Cys Phe
945                 950                 955                 960

Leu Arg Trp Asp Glu Asp Glu Cys Gly Val Thr Leu Pro Gly Lys Tyr
                965                 970                 975
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```
Arg Met Asp Val Cys Cys Cys Ser Ile Gly Ala Val Trp Gly Val Glu
            980                 985                 990

Cys Glu Ala Cys Pro Asp Pro Glu Ser Leu Glu Phe Ala Ser Leu Cys
        995                1000                1005

Pro Arg Gly Leu Gly Phe Ala Ser Arg Asp Phe Leu Ser Gly Arg Pro
   1010                1015                1020

Phe Tyr Lys Asp Val Asn Glu Cys Lys Val Phe Pro Gly Leu Cys Thr
1025                1030                1035                1040

His Gly Thr Cys Arg Asn Thr Val Gly Ser Phe His Cys Ala Cys Ala
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Gly Gly Phe Ala Leu Asp Ala Gln Glu Arg Asn Cys Thr Asp Ile Asp
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Glu Cys Arg Ile Ser Pro Asp Leu Cys Gly Gln Gly Thr Cys Val Asn
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Thr Pro Gly Ser Phe Glu Cys Glu Cys Phe Pro Gly Tyr Glu Ser Gly
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Phe Met Leu Met Lys Asn Cys Met Asp Val Asp Glu Cys Ala Arg Asp
1105                1110                1115                1120

Pro Leu Leu Cys Arg Gly Gly Thr Cys Thr Asn Thr Asp Gly Ser Tyr
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Lys Cys Gln Cys Pro Pro Gly His Glu Leu Thr Ala Lys Gly Thr Ala
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Cys Glu Asp Ile Asp Glu Cys Ser Leu Ser Asp Gly Leu Cys Pro His
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Gly Gln Cys Val Asn Val Ile Gly Ala Phe Gln Cys Ser Cys His Ala
   1170                1175                1180

Gly Phe Gln Ser Thr Pro Asp Arg Gly Ala Thr Ser Ala Ser Cys Pro
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Thr Glu Gly His Val Gln Val Val Leu Gly Pro Gly Glu Gln Met Cys
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Thr Gly Trp Ser Ile Arg Ala Lys Leu Ser Thr Val Pro Asn Pro Ala
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Pro Pro Asp Val Asp Glu Cys Glu Glu Asn Pro Arg Val Cys Asp Gln
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Gly His Cys Thr Asn Met Pro Gly Gly His Arg Cys Leu Cys Tyr Asp
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Gly Phe Met Ala Thr Pro Asp Met Arg Thr Cys Val Asp Val Asp Glu
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Cys Asp Leu Asn Pro His Ile Cys Leu His Gly Asp Cys Glu Asn Thr
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Lys Gly Ser Phe Val Cys His Cys Gln Leu Gly Tyr Met Val Arg Lys
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Gly Ala Thr Gly Cys Ser Asp Val Asp Glu Cys Glu Val Gly Gly His
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Asn Cys Asp Ser His Ala Ser Cys Leu Asn Ile Pro Gly Ser Phe Ser
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Cys Arg Cys Leu Pro Gly Trp Val Gly Asp Gly Phe Glu Cys His Asp
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Leu Asp Glu Cys Val Ser Gln Glu His Arg Cys Ser Pro Arg Gly Asp
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Cys Leu Asn Val Pro Gly Ser Tyr Arg Cys Thr Cys Arg Gln Gly Phe
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Val Asp Leu Cys Asp Asn Gly Gln Cys Leu Asn Ala Pro Gly Gly Tyr
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Arg Cys Glu Cys Glu Met Gly Phe Asp Pro Thr Glu Asp His Arg Ala
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Cys Gln Asp Val Asp Glu Cys Ala Gln Glu Asn Leu Cys Ala Phe Gly
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Ser Cys Glu Asn Leu Pro Gly Met Phe Arg Cys Ile Cys Asn Gly Gly
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Tyr Glu Leu Asp Arg Gly Gly Gly Asn Cys Thr Asp Ile Asn Glu Cys
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Ala Asp Pro Val Asn Cys Ile Asn Gly Val Cys Ile Asn Thr Pro Gly
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Ser Tyr Leu Cys Ser Cys Pro Gln Asp Phe Glu Leu Asn Pro Ser Gly
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Val Gly Cys Val Asp Thr Arg Ala Gly Asn Cys Phe Leu Glu Thr His
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Asp Arg Gly Asp Ser Gly Ile Ser Cys Ser Ala Glu Ile Gly Val Gly
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Cys Pro Gly Gly Glu Gly Phe Gln Pro Asn Arg Ile Thr Val Ile Leu
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Asp Cys Val Asn Thr Phe Gly Ser Phe Gln Cys Glu Cys Pro Pro Gly
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Tyr His Leu Ser Glu His Thr Arg Ile Cys Glu Asp Ile Asp Glu Cys
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Ser Thr His Ser Gly Ile Cys Gly Pro Gly Thr Cys Tyr Asn Thr Leu
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Gly Asn Tyr Thr Cys Val Cys Pro Ala Glu Tyr Leu Gln Val Asn Gly
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Gly Asn Asn Cys Met Asp Met Arg Lys Ser Val Cys Phe Arg His Tyr
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Asn Gly Thr Cys Gln Asn Glu Leu Ala Phe Asn Val Thr Arg Lys Met
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Cys Cys Cys Ser Tyr Asn Ile Gly Gln Ala Trp Asn Arg Pro Cys Glu
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Ala Cys Pro Thr Pro Ile Ser Pro Asp Tyr Gln Ile Leu Cys Gly Asn
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Gln Ala Pro Gly Phe Leu Thr Asp Ile His Thr Gly Lys Pro Leu Asp
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Ile Asp Glu Cys Gly Glu Ile Pro Ala Ile Cys Ala Asn Gly Ile Cys
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Ile Asn Gln Ile Gly Ser Phe Arg Cys Glu Cys Pro Ala Gly Phe Asn
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Tyr Asn Ser Ile Leu Leu Ala Cys Glu Asp Val Asp Glu Cys Gly Ser
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Arg Glu Ser Pro Cys Gln Gln Asn Ala Asp Cys Ile Asn Ile Pro Gly
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Ser Tyr Arg Cys Lys Cys Thr Arg Gly Tyr Lys Leu Ser Pro Gly Gly
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Ala Cys Val Gly Arg Asn Glu Cys Arg Glu Ile Pro Asn Val Cys Ser
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His Gly Asp Cys Met Asp Thr Glu Gly Ser Tyr Met Cys Leu Cys His
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Arg Gly Phe Gln Ala Ser Ala Asp Gln Thr Leu Cys Met Asp Ile Asp
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1905 1910 1915 1920

Gly Asp Cys Val Asp Phe Asp Glu Cys Thr Thr Leu Val Gly Gln Val
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Cys Arg Phe Gly His Cys Leu Asn Thr Ala Gly Ser Phe His Cys Leu
1940 1945 1950

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1955 1960 1965

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1970 1975 1980

Gln Asn Leu Glu Gly Ser Phe Arg Cys Ile Cys Pro Pro Gly Phe Gln
1985 1990 1995 2000

Val Gln Ser Asp His Cys Ile Asp Ile Asp Glu Cys Ser Glu Glu Pro
2005 2010 2015

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Cys Leu Cys Pro Pro Gly Phe Val Leu Ser Asp Asn Gly His Arg Cys
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Phe Asp Thr Arg Gln Ser Phe Cys Phe Thr Arg Phe Glu Ala Gly Lys
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Cys Ser Val Pro Lys Ala Phe Asn Thr Thr Lys Thr Arg Cys Cys Cys
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Ser Lys Arg Pro Gly Glu Gly Trp Gly Asp Pro Cys Glu Leu Cys Pro
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Trp Asp Gly Ala Leu Glu Ala Ala Gly Pro Gly Arg Val Arg Arg Arg
         35                  40                  45

Gly Ser Pro Gly Ile Leu Gln Gly Pro Asn Val Cys Gly Ser Arg Phe
     50                  55                  60

His Ala Tyr Cys Cys Pro Gly Trp Arg Thr Phe Pro Gly Arg Ser Gln
 65                  70                  75                  80

Cys Val Val Pro Ile Cys Arg Arg Ala Cys Gly Glu Gly Phe Cys Ser
                 85                  90                  95

Gln Pro Asn Leu Cys Thr Cys Ala Asp Gly Thr Leu Ala Pro Ser Cys
            100                 105                 110

Gly Val Ser Arg Ala Ile Cys Asp Arg Gly Cys His Asn Gly Gly Arg
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Cys Ile Gly Pro Asn Arg Cys Ala Cys Val Tyr Gly Phe Met Gly Pro
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Gln Cys Glu Arg Asp Tyr Arg Thr Gly Pro Cys Phe Gly Gln Val Gly
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Pro Glu Gly Cys Gln His Gln Leu Thr Gly Leu Val Cys Thr Lys Ala
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Leu Cys Cys Ala Thr Val Gly Arg Ala Trp Gly Leu Pro Cys Glu Leu
            180                 185                 190

Cys Pro Ala Gln Pro His Pro Cys Arg Arg Gly Phe Ile Pro Asn Ile
        195                 200                 205

His Thr Gly Ala Cys Gln Asp Val Asp Glu Cys Gln Ala Val Pro Gly
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Leu Cys Gln Gly Gly Ser Cys Val Asn Met Val Gly Ser Phe His Cys
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Cys Thr Asn Thr Val Ser Ser Tyr Phe Cys Lys Cys Pro Pro Gly Phe
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His Tyr Thr Arg Arg Gln Cys Cys Cys Asp Arg Gly Arg Cys Trp Ala
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Gln Thr Ile Asp Ile Cys Arg His Phe Thr Asn Leu Cys Leu Asn Gly
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Arg Cys Leu Pro Thr Pro Ser Ser Tyr Arg Cys Glu Cys Asn Val Gly
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Gly Arg Cys Val Asn Thr Glu Gly Ser Phe Gln Cys Val Cys Asn Ala

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Gly Ser Phe Ser Cys Leu Cys Lys Pro Gly Phe Leu Leu Ala Pro Gly
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Gly His Tyr Cys Met Asp Ile Asp Glu Cys Gln Thr Pro Gly Ile Cys
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Leu Gly Gly Leu Ala Val Gly Thr Asp Gly Arg Val Cys Val Asp Thr
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Arg Pro Phe Pro Gly Thr Val Thr Lys Ser Glu Cys Cys Cys Ala Asn
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Pro Asp His Gly Phe Gly Glu Pro Cys Gln Leu Cys Pro Ala Lys Asp
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Ser Ala Glu Phe Gln Ala Leu Cys Ser Ser Gly Leu Gly Ile Thr Thr
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Asp Gly Arg Asp Ile Asn Glu Cys Ala Leu Asp Pro Glu Val Cys Ala
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Asn Gly Val Cys Glu Asn Leu Arg Gly Ser Tyr Arg Cys Val Cys Asn
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Glu Cys Ala Leu Asn Ser Leu Leu Cys Asp Asn Gly Trp Cys Gln Asn
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Ser Pro Gly Ser Tyr Ser Cys Ser Cys Pro Pro Gly Phe His Phe Trp
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Asn Thr Ala Gly Ser Phe Arg Cys Glu Cys Pro Glu Gly Leu Met Leu
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Asp Ala Ser Gly Arg Leu Cys Val Asp Val Arg Leu Glu Pro Cys Phe
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Leu Arg Trp Asp Glu Asp Glu Cys Gly Val Thr Leu Pro Gly Lys Tyr
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Arg Met Asp Val Cys Cys Cys Ser Ile Gly Ala Val Trp Gly Val Glu
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Cys Glu Ala Cys Pro Asp Pro Glu Ser Leu Glu Phe Ala Ser Leu Cys
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Phe Tyr Lys Asp Val Asn Glu Cys Lys Val Phe Pro Gly Leu Cys Thr
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His Gly Thr Cys Arg Asn Thr Val Gly Ser Phe His Cys Ala Cys Ala
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Glu Cys Arg Ile Ser Pro Asp Leu Cys Gly Gln Gly Thr Cys Val Asn
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Thr Pro Gly Ser Phe Glu Cys Glu Cys Phe Pro Gly Tyr Glu Ser Gly
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Gln Asn Leu Glu Gly Ser Phe Arg Cys Ile Cys Pro Pro Gly Phe Gln
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Val Gln Ser Asp His Cys Ile Asp Ile Asp Glu Cys Ser Glu Glu Pro
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Asn Leu Cys Leu Phe Gly Thr Cys Thr Asn Ser Pro Gly Ser Phe Gln
1985                1990                1995                2000

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Phe Leu Leu Ala Pro Gly Gly His Tyr Cys Met Asp Ile Asp Glu Cys
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Gln Thr Pro Gly Ile Cys Val Asn Gly His Cys Thr Asn Thr Glu Gly
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Leu Cys Pro Ala Lys Asn Ser Ala Glu Phe Gln Ala Leu Cys Ser Ser
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Gly Leu Gly Ile Thr Thr Asp Gly Arg Asp Ile Asn Glu Cys Ala Leu
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Asp Pro Glu Val Cys Ala Asn Gly Val Cys Glu Asn Leu Arg Gly Ser
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Tyr Arg Cys Val Cys Asn Leu Gly Tyr Glu Ala Gly Ala Ser Gly Lys
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Asn Gly Trp Cys Gln Asn Ser Pro Gly Ser Tyr Ser Cys Ser Cys Pro
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Pro Gly Phe His Phe Trp Gln Asp Thr Glu Ile Cys Lys Asp Val Asp
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Pro Glu Gly Leu Met Leu Asp Ala Ser Gly Arg Leu Cys Val Asp Val
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Asp Pro Leu Leu Cys Trp Gly Gly Thr Cys Thr Asn Thr Asp Gly Ser
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Tyr Lys Cys Gln Cys Pro Pro Gly His Glu Leu Thr Ala Lys Gly Thr
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Ala Cys Glu Asp Ile Asp Glu Cys Ser Leu Ser Asp Gly Leu Cys Pro
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His Gly Gln Cys Val Asn Val Ile Gly Ala Phe Gln Cys Ser Cys His
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Ala Gly Phe Gln Ser Thr Pro Asp Arg Gln Gly Cys Val Asp Ile Asn
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Glu Cys Arg Val Gln Asn Gly Gly Cys Asp Val His Cys Ile Asn Thr
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Asp Gly Arg Ala Cys Ala Asp Val Asp Glu Cys Glu Glu Asn Pro Arg
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Val Cys Asp Gln Gly His Cys Thr Asn Met Pro Gly Gly His Arg Cys
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Leu Cys Tyr Asp Gly Phe Met Ala Thr Pro Asp Met Arg Thr Cys Val
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Asp Val Asp Glu Cys Asp Leu Asn Pro His Ile Cys Leu His Gly Asp
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Cys Glu Asn Thr Lys Gly Ser Phe Val Cys His Cys Gln Leu Gly Tyr
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Pro Gly Gly Tyr Arg Cys Glu Cys Glu Met Gly Phe Asp Pro Thr Glu
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Asn Pro Ser Gly Val Gly Cys Val Asp Thr Arg Ala Gly Asn Cys Phe
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Ile Gly Val Gly Val Thr Arg Ala Ser Cys Cys Cys Ser Leu Gly Arg
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Tyr Arg Thr Leu Cys Pro Gly Gly Glu Gly Phe Gln Pro Asn Arg Ile
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Ile Asp Glu Cys Ser Thr His Ser Gly Ile Cys Gly Pro Gly Thr Cys
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Tyr Asn Thr Leu Gly Asn Tyr Thr Cys Val Cys Pro Ala Glu Tyr Leu
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Gln Val Asn Gly Gly Asn Asn Cys Met Asp Met Arg Lys Ser Val Cys
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Phe Arg His Tyr Asn Gly Thr Cys Gln Asn Glu Leu Ala Phe Asn Val
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Thr Arg Lys Met Cys Cys Cys Ser Tyr Asn Ile Gly Gln Ala Trp Asn
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Arg Pro Cys Glu Ala Cys Pro Thr Pro Ile Ser Pro Asp Tyr Gln Ile
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Leu Cys Gly Asn Gln Ala Pro Gly Phe Leu Thr Asp Ile His Thr Gly
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Lys Pro Leu Asp Ile Asp Glu Cys Gly Glu Ile Pro Ala Ile Cys Ala
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Asn Gly Ile Cys Ile Asn Gln Ile Gly Ser Phe Arg Cys Glu Cys Pro
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Ala Gly Phe Asn Tyr Asn Ser Ile Leu Leu Ala Cys Glu Asp Val Asp
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Glu Cys Gly Ser Arg Glu Ser Pro Cys Gln Gln Asn Ala Asp Cys Ile
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Asn Ile Pro Gly Ser Tyr Arg Cys Lys Cys Thr Arg Gly Tyr Lys Leu
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Cys Leu Cys His Arg Gly Phe Gln Ala Ser Ala Asp Gln Thr Leu Cys
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Met Asp Ile Asp Glu Cys Asp Arg Gln Pro Cys Gly Asn Gly Thr Cys
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Pro Gly Thr Cys Gln Asn Leu Glu Gly Ser Phe Arg Cys Ile Cys Pro
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1955 1960 1965

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aaccaagatc ctgtggatac ggtggtgcgg acagagattg tgcatgtgtg gcctggaact 1980
gatgggtttc tgaaggacaa caacaatgct gcccagcgcc tgttggacgg gatgaacttc 2040
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atggctcagt cggtgtccga gcttagcctt ggacccacca aggctgtgac ttcctggctg 2100
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gccaggcctg cgtactgggt gcctgaccac gaaatcctcc actgccacaa ctgccggaag 2520
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cacaattcct tag 2713

<210> 18
<211> 891
<212> PRT
<213> Homo sapiens

<400> 18
Met Gly Arg Ala Arg Trp Val Thr Ser Val Ile Pro Ala Leu Trp Glu
1 5 10 15

Ala Lys Cys Gly Pro His Ser Lys Ser Asp Phe Pro Asn Ala Gln Lys
20 25 30

Met Ala Met Leu Ser Pro Gln Thr Phe Glu Phe Arg Asn Lys Ile Glu
35 40 45

Leu Ile Ser Glu Ala Leu Pro Glu Asp Gln Glu Arg Thr Phe Gln Asp
50 55 60

Leu Gln Glu Pro Glu Leu Ser His Thr Pro Asn Ser Val Gln Asn Pro
65 70 75 80

Val Glu Val Ser Cys Ser Leu Gln Thr Gln Ile Phe Val Phe Thr Pro
85 90 95

Gly Ala Ser Ser Val Thr Ile Ile Trp Trp Val Cys Phe Leu Thr Ser
100 105 110

Val Ser Met Ser Ala Gln Thr Ser Pro Ala Glu Lys Gly Leu Asn Pro
115 120 125

Gly Leu Met Cys Gln Glu Ser Tyr Ala Cys Ser Gly Thr Asp Glu Ala
130 135 140

Ile Phe Glu Cys Asp Glu Cys Cys Ser Leu Gln Cys Leu Arg Cys Glu
145 150 155 160

Glu Glu Leu His Arg Gln Glu Arg Leu Arg Asn His Glu Arg Ile Arg
165 170 175

Leu Lys Pro Gly His Val Pro Tyr Cys Asp Leu Cys Lys Gly Leu Ser
180 185 190

Gly His Leu Pro Gly Val Arg Gln Arg Ala Ile Val Arg Cys Gln Thr

```
        195                 200                 205

Cys Lys Ile Asn Leu Cys Leu Glu Cys Gln Lys Arg Thr His Ser Gly
    210                 215                 220

Gly Asn Lys Arg Arg His Pro Val Thr Val Tyr Asn Val Ser Asn Leu
225                 230                 235                 240

Gln Glu Ser Leu Glu Ala Glu Glu Met Asp Glu Glu Thr Lys Arg Lys
                245                 250                 255

Lys Met Thr Glu Lys Val Val Ser Phe Leu Leu Val Asp Glu Asn Glu
            260                 265                 270

Glu Ile Gln Val Thr Asn Glu Glu Asp Phe Ile Arg Lys Leu Asp Cys
        275                 280                 285

Lys Pro Asp Gln His Leu Lys Val Val Ser Ile Phe Gly Asn Thr Gly
    290                 295                 300

Asp Gly Lys Ser His Thr Leu Asn His Thr Phe Phe Tyr Gly Arg Glu
305                 310                 315                 320

Val Phe Lys Thr Ser Pro Thr Gln Glu Ser Cys Thr Val Gly Val Trp
                325                 330                 335

Ala Ala Tyr Asp Pro Val His Lys Val Ala Val Ile Asp Thr Glu Gly
            340                 345                 350

Leu Leu Gly Ala Thr Val Asn Leu Ser Gln Arg Thr Arg Leu Leu Leu
        355                 360                 365

Lys Val Leu Ala Ile Ser Asp Leu Val Ile Tyr Arg Thr His Ala Asp
    370                 375                 380

Arg Leu His Asn Asp Leu Phe Lys Phe Leu Gly Asp Ala Ser Glu Ala
385                 390                 395                 400

Tyr Leu Lys His Phe Thr Lys Glu Leu Lys Ala Thr Thr Ala Arg Cys
                405                 410                 415

Gly Leu Asp Val Pro Leu Ser Thr Leu Gly Pro Ala Val Ile Ile Phe
            420                 425                 430

His Glu Thr Val His Thr Gln Leu Leu Gly Ser Asp His Pro Ser Glu
        435                 440                 445

Val Pro Glu Lys Leu Ile Gln Asp Arg Phe Arg Lys Leu Gly Arg Phe
    450                 455                 460

Pro Glu Ala Phe Ser Ser Ile His Tyr Lys Gly Thr Arg Thr Tyr Asn
465                 470                 475                 480

Pro Pro Thr Asp Phe Ser Gly Leu Arg Arg Ala Leu Glu Gln Leu Leu
                485                 490                 495

Glu Asn Asn Thr Thr Arg Ser Pro Arg His Pro Gly Val Ile Phe Lys
```

```
            500                 505                 510

Ala Leu Lys Ala Leu Ser Asp Arg Phe Ser Gly Glu Ile Pro Asp Asp
        515                 520                 525

Gln Met Ala His Ser Ser Phe Phe Pro Asp Glu Tyr Phe Thr Cys Ser
    530                 535                 540

Ser Leu Cys Leu Ser Cys Gly Val Gly Cys Lys Lys Ser Met Asn His
545                 550                 555                 560

Gly Lys Glu Gly Val Pro His Glu Ala Lys Ser Arg Cys Arg Tyr Ser
                565                 570                 575

His Gln Tyr Asp Asn Arg Val Tyr Thr Cys Lys Ala Cys Tyr Glu Arg
            580                 585                 590

Gly Glu Glu Val Ser Val Val Pro Lys Thr Ser Ala Ser Thr Asp Ser
        595                 600                 605

Pro Trp Met Gly Leu Ala Lys Tyr Ala Trp Ser Gly Tyr Val Ile Glu
    610                 615                 620

Cys Pro Asn Cys Gly Val Val Tyr Arg Ser Arg Gln Tyr Trp Phe Gly
625                 630                 635                 640

Asn Gln Asp Pro Val Asp Thr Val Val Arg Thr Glu Ile Val His Val
                645                 650                 655

Trp Pro Gly Thr Asp Gly Phe Leu Lys Asp Asn Asn Asn Ala Ala Gln
            660                 665                 670

Arg Leu Leu Asp Gly Met Asn Phe Met Ala Gln Ser Val Ser Glu Leu
        675                 680                 685

Ser Leu Gly Pro Thr Lys Ala Val Thr Ser Trp Leu Thr Asp Gln Ile
    690                 695                 700

Ala Pro Ala Tyr Trp Arg Pro Asn Ser Gln Ile Leu Ser Cys Asn Lys
705                 710                 715                 720

Cys Ala Thr Ser Phe Lys Asp Asn Asp Thr Lys His His Cys Arg Ala
                725                 730                 735

Cys Gly Glu Gly Phe Cys Asp Ser Cys Ser Ser Lys Thr Arg Pro Val
            740                 745                 750

Pro Glu Arg Gly Trp Gly Pro Ala Pro Val Arg Val Cys Asp Asn Cys
        755                 760                 765

Tyr Glu Ala Arg Asn Val Gln Leu Ala Val Thr Glu Ala Gln Val Asp
    770                 775                 780

Asp Glu Gly Gly Thr Leu Ile Ala Arg Lys Val Gly Glu Ala Val Gln
785                 790                 795                 800

Asn Thr Leu Gly Ala Val Val Thr Ala Ile Asp Ile Pro Leu Gly Leu
```

```
                805                 810                 815

Val Lys Asp Ala Ala Arg Pro Ala Tyr Trp Val Pro Asp His Glu Ile
            820                 825                 830

Leu His Cys His Asn Cys Arg Lys Glu Phe Ser Ile Lys Leu Ser Lys
        835                 840                 845

His His Cys Arg Ala Cys Gly Gln Gly Phe Cys Asp Glu Cys Ser His
    850                 855                 860

Asp Arg Arg Ala Val Pro Ser Arg Gly Trp Asp His Pro Val Arg Val
865                 870                 875                 880

Cys Phe Asn Cys Asn Lys Lys Pro Gly Asp Leu
                885                 890
```

<210> 19
<211> 1761
<212> DNA
<213> Homo sapiens

<400> 19

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agctgagccg gagggaatcc ggaaggacac gctgaacagg aacagaaatg aataaaagtc 60
gctggcagag tagaagacga catgggagaa gaagccacca gcagaaccct tggttcagac 120
tccgtgattc tgaagacagg tctgactccc gggcagcaca gcccgctcac gattccggcc 180
acggtgatga cgagtctccg tcaacctcgt ctggcacagc tgggacctcc tctgtgccag 240
agctacctgg gttttacttt gaccctgaaa agaaacgcta cttccgcttg ctccctggac 300
ataacaactg caaccccctg acgaaagaga gcatccggca gaaggagatg gagagcaaga 360
gactgcggct gctccaggaa gaagacagac ggaaaaagat tgccaggatg ggatttaatg 420
catcttccat gctacgaaaa agccagctgg gttttctcaa cgtcaccaat tactgccatt 480
tagcccacga gctgcgtctc agctgcatgg agaggaaaaa ggtccagatt cgaagcatga 540
gggatccctc cgccttggca agcgaccgat ttaacctcat actggcagat accaacagtg 600
accggctctt cacagtgaac gatgttaaag ttggaggctc caagtatggt atcatcaacc 660
tgcaaagtct gaagacccct acgctcaagg tgttcatgca cgaaaacctc tacttcacca 720
accggaaggt gaattcggtg tgctgggcct cgctgaatca cttggattcc cacattctgc 780
tatgcctcat gggactcgca gagactccag gctgtgccac cctgctccca gcatcactgt 840
tcgtcaatag tcacccagga atagaccggc ctggcatgct ctgcagtttc cggatccctg 900
gtgcctggtc ctgtgcctgg tccctgaata tccaagcaaa taactgcttc agtacaggct 960
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aggaagaagg aatcctggtg gcagtgggcc aggactgcta cacgagaatc tggagcctcc 1380
acgatgcccg cctactgaga accataccct ccccgtaccc tgcctccaag gccgacattc 1440
ccagtgtggc cttctcgtcg cggctggggg gctcccgggg cgcgccgggg ctgctcatgg 1500
ctgtcgggca ggacctttac tgttactcct acagctaatt ctgcagggca cagcccagag 1560
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tttaagtgac actcagtgta cacagatccc atcctctggc tgctaggaga gaagtgctga 1680
atgttccgtg tggagatgct caggaaagtt atttgagtta aattgctggc tgagagagct 1740
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<210> 20

<211> 496
<212> PRT
<213> Homo sapiens

<400> 20
Met Asn Lys Ser Arg Trp Gln Ser Arg Arg Arg His Gly Arg Arg Ser
1 5 10 15

His Gln Gln Asn Pro Trp Phe Arg Leu Arg Asp Ser Glu Asp Arg Ser
20 25 30

Asp Ser Arg Ala Ala Gln Pro Ala His Asp Ser Gly His Gly Asp Asp
35 40 45

Glu Ser Pro Ser Thr Ser Ser Gly Thr Ala Gly Thr Ser Ser Val Pro
50 55 60

Glu Leu Pro Gly Phe Tyr Phe Asp Pro Glu Lys Lys Arg Tyr Phe Arg
65 70 75 80

Leu Leu Pro Gly His Asn Asn Cys Asn Pro Leu Thr Lys Glu Ser Ile
85 90 95

Arg Gln Lys Glu Met Glu Ser Lys Arg Leu Arg Leu Leu Gln Glu Glu
100 105 110

Asp Arg Arg Lys Lys Ile Ala Arg Met Gly Phe Asn Ala Ser Ser Met
115 120 125

Leu Arg Lys Ser Gln Leu Gly Phe Leu Asn Val Thr Asn Tyr Cys His
130 135 140

Leu Ala His Glu Leu Arg Leu Ser Cys Met Glu Arg Lys Lys Val Gln
145 150 155 160

Ile Arg Ser Met Arg Asp Pro Ser Ala Leu Ala Ser Asp Arg Phe Asn
165 170 175

Leu Ile Leu Ala Asp Thr Asn Ser Asp Arg Leu Phe Thr Val Asn Asp
180 185 190

Val Lys Val Gly Gly Ser Lys Tyr Gly Ile Ile Asn Leu Gln Ser Leu
195 200 205

Lys Thr Pro Thr Leu Lys Val Phe Met His Glu Asn Leu Tyr Phe Thr
210 215 220

Asn Arg Lys Val Asn Ser Val Cys Trp Ala Ser Leu Asn His Leu Asp
225 230 235 240

Ser His Ile Leu Leu Cys Leu Met Gly Leu Ala Glu Thr Pro Gly Cys
245 250 255

Ala Thr Leu Leu Pro Ala Ser Leu Phe Val Asn Ser His Pro Gly Ile
260 265 270

Asp Arg Pro Gly Met Leu Cys Ser Phe Arg Ile Pro Gly Ala Trp Ser

```
        275                 280                 285

Cys Ala Trp Ser Leu Asn Ile Gln Ala Asn Asn Cys Phe Ser Thr Gly
    290                 295                 300

Leu Ser Arg Arg Val Leu Leu Thr Asn Val Val Thr Gly His Arg Gln
305                 310                 315                 320

Ser Phe Gly Thr Asn Ser Asp Val Leu Ala Gln Gln Phe Ala Leu Met
                325                 330                 335

Ala Pro Leu Leu Phe Asn Gly Cys Arg Ser Gly Glu Ile Phe Ala Ile
            340                 345                 350

Asp Leu Arg Cys Gly Asn Gln Gly Lys Gly Trp Lys Ala Thr Arg Leu
        355                 360                 365

Phe His Asp Ser Ala Val Thr Ser Val Arg Ile Leu Gln Asp Glu Gln
    370                 375                 380

Tyr Leu Met Ala Ser Asp Met Ala Gly Lys Ile Lys Leu Trp Asp Leu
385                 390                 395                 400

Arg Thr Thr Lys Cys Val Arg Gln Tyr Glu Gly His Val Asn Glu Tyr
                405                 410                 415

Ala Tyr Leu Pro Leu His Val His Glu Glu Glu Gly Ile Leu Val Ala
            420                 425                 430

Val Gly Gln Asp Cys Tyr Thr Arg Ile Trp Ser Leu His Asp Ala Arg
        435                 440                 445

Leu Leu Arg Thr Ile Pro Ser Pro Tyr Pro Ala Ser Lys Ala Asp Ile
    450                 455                 460

Pro Ser Val Ala Phe Ser Ser Arg Leu Gly Gly Ser Arg Gly Ala Pro
465                 470                 475                 480

Gly Leu Leu Met Ala Val Gly Gln Asp Leu Tyr Cys Tyr Ser Tyr Ser
                485                 490                 495
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<210> 21
<211> 1018
<212> DNA
<213> Homo sapiens

<400> 21
ctggccggct tggccgtcat cagccgaggg ctgctctccc agagcctgga gttcaactct 60
cctgccgaca actacacagt gtgtgaaggt gacaacgcca ccctcagctg cttcatcgac 120
gagcacgtga cccgcgtggc ttggctgaac cgctccaaca tcctgtatgc cggcaatgac 180
cgctggacca gcgacccgcg ggtgcggctg ctcatcaaca cccccgagga gttctccatc 240
ctcatcaccg aggtggggct cggcgacgag ggcctctaca cctgctcctt ccagacccgc 300
caccagccgt acaccactca ggtctacctc attgtccacg tccctgcccg cattgtgaac 360

atctcgtcgc ctgtgacggt gaatgagggg ggcaatgtga acctgctttg cctggccgtg 420
gggcggccag agcccacggt cacctggaga cagctccgag acggcttcac ctcggaggga 480
gagatcctgg agatctctga catccagcgg ggccaggccg gggagtatga gtgcgtgact 540
cacaacgggg ttaactcggc gcccgacagc cgccgcgtgc tggtcacagt caactatcct 600
ccgaccatca cggacgtgac cagcgcccgc accgcgctgg gccggaccgc cctcctgcgc 660
tgcgaagcca tggcggttcc ccccgcggat ttccagtggt acaaggatga cagactgctg 720
agcagcggca cggccgaagg cctgaaggtg cagacggagc gcacccgctc gatgcttctc 780
tttgccaacg tgagcgcccg gcattacggc aactatacgt gtcgcgccgc caatcgactg 840
ggagcgtcca gcgcctccat gcggctcctg cgcccaggat ccctggagaa ctcagccccg 900
aggcccccag ggctcctggc cctcctctcc gccctgggct ggctgtggtg gagaatgtag 960
gcgcaaccca gtccagctca cctccccctg caggggcct caaaccaaga gtgagaga 1018

<210> 22
<211> 319
<212> PRT
<213> Homo sapiens

<400> 22
Leu Ala Gly Leu Ala Val Ile Ser Arg Gly Leu Leu Ser Gln Ser Leu
1 5 10 15

Glu Phe Asn Ser Pro Ala Asp Asn Tyr Thr Val Cys Glu Gly Asp Asn
20 25 30

Ala Thr Leu Ser Cys Phe Ile Asp Glu His Val Thr Arg Val Ala Trp
35 40 45

Leu Asn Arg Ser Asn Ile Leu Tyr Ala Gly Asn Asp Arg Trp Thr Ser
50 55 60

Asp Pro Arg Val Arg Leu Leu Ile Asn Thr Pro Glu Glu Phe Ser Ile
65 70 75 80

Leu Ile Thr Glu Val Gly Leu Gly Asp Glu Gly Leu Tyr Thr Cys Ser
85 90 95

Phe Gln Thr Arg His Gln Pro Tyr Thr Thr Gln Val Tyr Leu Ile Val
100 105 110

His Val Pro Ala Arg Ile Val Asn Ile Ser Ser Pro Val Thr Val Asn
115 120 125

Glu Gly Gly Asn Val Asn Leu Leu Cys Leu Ala Val Gly Arg Pro Glu
130 135 140

Pro Thr Val Thr Trp Arg Gln Leu Arg Asp Gly Phe Thr Ser Glu Gly
145 150 155 160

Glu Ile Leu Glu Ile Ser Asp Ile Gln Arg Gly Gln Ala Gly Glu Tyr
165 170 175

Glu Cys Val Thr His Asn Gly Val Asn Ser Ala Pro Asp Ser Arg Arg
180 185 190

Val Leu Val Thr Val Asn Tyr Pro Pro Thr Ile Thr Asp Val Thr Ser
195 200 205

```
Ala Arg Thr Ala Leu Gly Arg Thr Ala Leu Leu Arg Cys Glu Ala Met
    210                 215                 220

Ala Val Pro Pro Ala Asp Phe Gln Trp Tyr Lys Asp Asp Arg Leu Leu
225                 230                 235                 240

Ser Ser Gly Thr Ala Glu Gly Leu Lys Val Gln Thr Glu Arg Thr Arg
                245                 250                 255

Ser Met Leu Leu Phe Ala Asn Val Ser Ala Arg His Tyr Gly Asn Tyr
            260                 265                 270

Thr Cys Arg Ala Ala Asn Arg Leu Gly Ala Ser Ser Ala Ser Met Arg
        275                 280                 285

Leu Leu Arg Pro Gly Ser Leu Glu Asn Ser Ala Pro Arg Pro Pro Gly
    290                 295                 300

Leu Leu Ala Leu Leu Ser Ala Leu Gly Trp Leu Trp Trp Arg Met
305                 310                 315
```

<210> 23
<211> 1017
<212> DNA
<213> Homo sapiens

<400> 23
ctggccggct tggccgtcat cagccgaggg ctgctctccc agagcctgga gttcaactct 60
cctgccgaca actacacagt gtgtgaaggt gacaacgcca ccctcagctg cttcatcgac 120
gagcacgtga cccgcgtggc ctggctgaac cgctccaaca tcctgtatgc cggcaatgac 180
cgctggacca gcgacccgcg ggtgcggctg ctcatcaaca cccccgagga gttctccatc 240
ctcatcaccg aggtggggct cggcgacgag ggcctctaca cctgctcctt ccagacccgc 300
caccagccgt acaccactca ggtctacctc attgtccacg tccctgcccg cattgtgaac 360
atctcgtcgc ctgtgacggt gaatgagggg ggcaatgtga acctgctttg cctggccgtg 420
gggcggccag agcccacggt cacctggaga cagctccgag acggcttcac ctcggaggga 480
gagatcctgg agatctctga catccagcgg ggccaggccg gggagtatga gtgcgtgact 540
cacaacgggg ttaactcggc gcccgacagc cgccgcgtgc tggtcacagt caactatcct 600
ccgaccatca cggacgtgac cagcgcccgc accgcgctgg gccgggccgc cctcctgcgc 660
tgcgaagcca tggcggttcc ccccgcggat ttccagtggt acaaggatga cagactgctg 720
agcagcggca cggccgaagg cctgaaggtg cagacggagc gcacccgctc gatgcttctc 780
tttgccaacg tgagcgcccg gcattacggc aactatacgt gtcgcgccgc caaccgactg 840
ggagcgtcca gcgcctccat gcggctcctg cgcccaggat ccctggagaa ctcagccccg 900
aggcccccag ggctcctggc cctcctctcc gccctgggct ggctgtggtg gagaatgtag 960
gccaacccag tccagctcac ctccccctgc agggggcctc aaaccaagag tgagaga   1017

<210> 24
<211> 319
<212> PRT
<213> Homo sapiens

<400> 24
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Leu Ala Gly Leu Ala Val Ile Ser Arg Gly Leu Leu Ser Gln Ser Leu
  1               5                  10                  15
```

Glu Phe Asn Ser Pro Ala Asp Asn Tyr Thr Val Cys Glu Gly Asp Asn
20 25 30

Ala Thr Leu Ser Cys Phe Ile Asp Glu His Val Thr Arg Val Ala Trp
35 40 45

Leu Asn Arg Ser Asn Ile Leu Tyr Ala Gly Asn Asp Arg Trp Thr Ser
50 55 60

Asp Pro Arg Val Arg Leu Leu Ile Asn Thr Pro Glu Glu Phe Ser Ile
65 70 75 80

Leu Ile Thr Glu Val Gly Leu Gly Asp Glu Gly Leu Tyr Thr Cys Ser
85 90 95

Phe Gln Thr Arg His Gln Pro Tyr Thr Thr Gln Val Tyr Leu Ile Val
100 105 110

His Val Pro Ala Arg Ile Val Asn Ile Ser Ser Pro Val Thr Val Asn
115 120 125

Glu Gly Gly Asn Val Asn Leu Leu Cys Leu Ala Val Gly Arg Pro Glu
130 135 140

Pro Thr Val Thr Trp Arg Gln Leu Arg Asp Gly Phe Thr Ser Glu Gly
145 150 155 160

Glu Ile Leu Glu Ile Ser Asp Ile Gln Arg Gly Gln Ala Gly Glu Tyr
165 170 175

Glu Cys Val Thr His Asn Gly Val Asn Ser Ala Pro Asp Ser Arg Arg
180 185 190

Val Leu Val Thr Val Asn Tyr Pro Pro Thr Ile Thr Asp Val Thr Ser
195 200 205

Ala Arg Thr Ala Leu Gly Arg Ala Ala Leu Leu Arg Cys Glu Ala Met
210 215 220

Ala Val Pro Pro Ala Asp Phe Gln Trp Tyr Lys Asp Asp Arg Leu Leu
225 230 235 240

Ser Ser Gly Thr Ala Glu Gly Leu Lys Val Gln Thr Glu Arg Thr Arg
245 250 255

Ser Met Leu Leu Phe Ala Asn Val Ser Ala Arg His Tyr Gly Asn Tyr
260 265 270

Thr Cys Arg Ala Ala Asn Arg Leu Gly Ala Ser Ser Ala Ser Met Arg
275 280 285

Leu Leu Arg Pro Gly Ser Leu Glu Asn Ser Ala Pro Arg Pro Pro Gly
290 295 300

Leu Leu Ala Leu Leu Ser Ala Leu Gly Trp Leu Trp Trp Arg Met
305 310 315

<210> 25
<211> 1136
<212> DNA
<213> Homo sapiens

<400> 25
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cgccaccctc agctgcttca tcgacgagca cgtgacccgc gtggcctggc tgaaccgctc 120
caacatcctg tatgccggca atgaccgctg gaccagcgac ccgcgggtgt ggctgctcat 180
caacaccccc gaggagttct ccatcctcat caccgaggtg gggctcggcg acgagggcct 240
ctacacctgc tccttccaga cccgccacca gccgtacacc actcaggtct acctcattgt 300
ccacgtccct gcccgcattg tgaacatctc gtcgcctgtg atggtgaatg agggggggcaa 360
tgtgaacctg ctttgcctgg ccgtggggcg gccagagccc acggtcacct ggagacagct 420
ccgagacggc ttcacctcgg agggagagat cctggagatc tctgacatcc agcggggcca 480
ggccggggag tatgagtgcg tgactcacaa cggggttaac tcggcgcccg acagccgccg 540
cgtgctggtc acagtcaact atcctccgac catcacggac gtgaccagcg cccgcaccgc 600
gctgggccgg gccgccctcc tgcgctgcga agccatggcg gttccccccg cggatttcca 660
gtggtataag gatgacagac tgctgagcag cggcacggcc gaaggcctga aggtgcagat 720
ggagcgcacc cgctcgatgc ttctctttgc caacgtgagc gcccggcatt acggcaacta 780
tacgtgtcgc gccgccaacc gactgggagc gtccagcgcc tccatgcggc tcctgcgccc 840
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gggctggctg tggtggagaa tgtaggcgca acccagtgga gctcacctcc ccctgcaggg 960
ggcctcaggc caagagtgag agaaacgggg gagcaagagc cgtgggtctc gtgggggcag 1020
aagagctctc ggccaccaag gaagaagaga gaggagaaga ggaggaggca gaggaagaaa 1080
gatcttcaga gaacccatca ctgtgaggga taacgcaaaa ttatgcatct ttctac 1136

<210> 26
<211> 307
<212> PRT
<213> Homo sapiens

<400> 26
Ser Gln Ser Leu Glu Phe Asn Ser Pro Ala Asp Asn Tyr Thr Val Cys
1 5 10 15

Glu Gly Asp Asn Ala Thr Leu Ser Cys Phe Ile Asp Glu His Val Thr
20 25 30

Arg Val Ala Trp Leu Asn Arg Ser Asn Ile Leu Tyr Ala Gly Asn Asp
35 40 45

Arg Trp Thr Ser Asp Pro Arg Val Trp Leu Leu Ile Asn Thr Pro Glu
50 55 60

Glu Phe Ser Ile Leu Ile Thr Glu Val Gly Leu Gly Asp Glu Gly Leu
65 70 75 80

Tyr Thr Cys Ser Phe Gln Thr Arg His Gln Pro Tyr Thr Thr Gln Val
85 90 95

Tyr Leu Ile Val His Val Pro Ala Arg Ile Val Asn Ile Ser Ser Pro
100 105 110

Val Met Val Asn Glu Gly Gly Asn Val Asn Leu Leu Cys Leu Ala Val
115 120 125

```
Gly Arg Pro Glu Pro Thr Val Thr Trp Arg Gln Leu Arg Asp Gly Phe
    130                 135                 140

Thr Ser Glu Gly Glu Ile Leu Glu Ile Ser Asp Ile Gln Arg Gly Gln
145                 150                 155                 160

Ala Gly Glu Tyr Glu Cys Val Thr His Asn Gly Val Asn Ser Ala Pro
                165                 170                 175

Asp Ser Arg Arg Val Leu Val Thr Val Asn Tyr Pro Pro Thr Ile Thr
            180                 185                 190

Asp Val Thr Ser Ala Arg Thr Ala Leu Gly Arg Ala Ala Leu Leu Arg
        195                 200                 205

Cys Glu Ala Met Ala Val Pro Pro Ala Asp Phe Gln Trp Tyr Lys Asp
    210                 215                 220

Asp Arg Leu Leu Ser Ser Gly Thr Ala Glu Gly Leu Lys Val Gln Met
225                 230                 235                 240

Glu Arg Thr Arg Ser Met Leu Leu Phe Ala Asn Val Ser Ala Arg His
                245                 250                 255

Tyr Gly Asn Tyr Thr Cys Arg Ala Ala Asn Arg Leu Gly Ala Ser Ser
            260                 265                 270

Ala Ser Met Arg Leu Leu Arg Pro Gly Ser Leu Glu Asn Ser Ala Pro
        275                 280                 285

Arg Pro Pro Gly Leu Leu Ala Leu Leu Ser Ala Leu Gly Trp Leu Trp
    290                 295                 300

Trp Arg Met
305
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<210> 27
<211> 1169
<212> DNA
<213> Homo sapiens

<400> 27
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cctggccggc ttggccgtca tcagccgggg gctgctctcc cagaggctgg agttcaactc 180
tcctgccgac aactacacag tgtgtgaagg tgacaacgcc accctcagct gcttcatgga 240
cgagcatgtg acccgcgtgg cctggctgaa ccgctccaac atcctgtacg ccggcaacga 300
ccgcaggacc agggacccgc gggtgcggct gctcatcaac acccccgagg agttctccat 360
cctcgtcacc gaggtggggc tcggcgacga gggcctctac acctgctcct tccagacccg 420
ccaccagccg tacaccactc aggtctacct cattgtccac gtccctgccc gcgttgtgaa 480
catctcgtcg cctgtgatgg tgaatgaggg aggtaatgtg aacctgcttt gcctggccgt 540
ggggcggcca gagcccacgg tcacctggag acagctccga gacggcttca cctcggaggg 600
agagatcctg gagatctctg acatcctgcg gggccaggcc ggggagtatg agtgcgtgac 660
tcacaacggg gttaactcgg cgcccgacag ccgccgcgtg ctggtcacag tcaactatcc 720
tccgaccatc acggacgtga ccagcgcccg caccgcgctg gggccgggcc gcctactgcg 780

ctgcgaagcc atggcggttt cccccgcgga tttccagtgg tataaggatg acagactact 840
gagcagcggc acggccgagg gcctgaaggt gcagatggag cgcactcgct cgatgcttct 900
ctttgccaac atgagcgccc ggcattacgg caactatacg tgttgcgccg ccaaccggct 960
gggagcgtcc agcgcctcca tgcggctcct gtgcccagga tccctggaga actcagcccc 1020
gaggccccca gggcccctgg ccctcctctc cgccctgggc tggctgtggt ggagaatgta 1080
ggcgcaaccc agtggagctc gcctcccccc gcaggggggcc tcaggccaag agtgagagaa 1140
aaggggggagc aagagccctg ggtctcgtg 1169

<210> 28
<211> 336
<212> PRT
<213> Homo sapiens

<400> 28
Met Pro Pro Ala Ala Pro Gly Ala Arg Leu Arg Leu Leu Ala Ala Ala
1 5 10 15

Ala Leu Ala Gly Leu Ala Val Ile Ser Arg Gly Leu Leu Ser Gln Arg
20 25 30

Leu Glu Phe Asn Ser Pro Ala Asp Asn Tyr Thr Val Cys Glu Gly Asp
35 40 45

Asn Ala Thr Leu Ser Cys Phe Met Asp Glu His Val Thr Arg Val Ala
50 55 60

Trp Leu Asn Arg Ser Asn Ile Leu Tyr Ala Gly Asn Asp Arg Arg Thr
65 70 75 80

Arg Asp Pro Arg Val Arg Leu Leu Ile Asn Thr Pro Glu Glu Phe Ser
85 90 95

Ile Leu Val Thr Glu Val Gly Leu Gly Asp Glu Gly Leu Tyr Thr Cys
100 105 110

Ser Phe Gln Thr Arg His Gln Pro Tyr Thr Thr Gln Val Tyr Leu Ile
115 120 125

Val His Val Pro Ala Arg Val Val Asn Ile Ser Ser Pro Val Met Val
130 135 140

Asn Glu Gly Gly Asn Val Asn Leu Leu Cys Leu Ala Val Gly Arg Pro
145 150 155 160

Glu Pro Thr Val Thr Trp Arg Gln Leu Arg Asp Gly Phe Thr Ser Glu
165 170 175

Gly Glu Ile Leu Glu Ile Ser Asp Ile Leu Arg Gly Gln Ala Gly Glu
180 185 190

Tyr Glu Cys Val Thr His Asn Gly Val Asn Ser Ala Pro Asp Ser Arg
195 200 205

Arg Val Leu Val Thr Val Asn Tyr Pro Pro Thr Ile Thr Asp Val Thr
210 215 220

```
Ser Ala Arg Thr Ala Leu Gly Pro Gly Arg Leu Leu Arg Cys Glu Ala
225                 230                 235                 240

Met Ala Val Ser Pro Ala Asp Phe Gln Trp Tyr Lys Asp Asp Arg Leu
                245                 250                 255

Leu Ser Ser Gly Thr Ala Glu Gly Leu Lys Val Gln Met Glu Arg Thr
            260                 265                 270

Arg Ser Met Leu Leu Phe Ala Asn Met Ser Ala Arg His Tyr Gly Asn
        275                 280                 285

Tyr Thr Cys Cys Ala Ala Asn Arg Leu Gly Ala Ser Ser Ala Ser Met
    290                 295                 300

Arg Leu Leu Cys Pro Gly Ser Leu Glu Asn Ser Ala Pro Arg Pro Pro
305                 310                 315                 320

Gly Pro Leu Ala Leu Leu Ser Ala Leu Gly Trp Leu Trp Trp Arg Met
                325                 330                 335
```

<210> 29
<211> 1377
<212> DNA
<213> Homo sapiens

<400> 29
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cagttttata aatggtatta tttgctgcaa ttttaactgt ataaacatct ccctttttata 60
tataggtccc aaatgtggta tcttttcaca atgatgtatt ttatccgaat tcttggaatt 120
actcatggtg tctttcaaaa ttatagatct gtgaaacctg aagcagatat gaatattagc 180
cagattattt cctactgggg ctaccctgat gaagaatatg atattgtaac cgaagatggt 240
tatatccttg gcctttatag aattccttat tggaggacag acaataataa aaatctaggt 300
aattcagctc agagggttgt tgtatacttg caacatggtt tgcttacatc tgccagcagc 360
tggatttcca atcttcccaa caatagtctg ggcttcattc tggcagatgc tggttatgat 420
gtgtggatgg gaaatagcag aggaaatacc tggtccagga aacacttgta cctagaaacg 480
agttccaaag aattctgggc tttcaggtac gctcaaggag gcctgcctgc ctctgtagac 540
tgcatcttgg tgaagaagag aggagagaaa aatatatatc attatatctt tcattcccaa 600
gtacatagcc agggaacctt aggtttcata acattttcta ctatatcaaa gatagctgaa 660
agaatcaaaa tatttttgc tttagcaccc tcatcctcag tcaaatatac caagtcaatt 720
attcttaaac ttacatacaa atggaagtca ataggcaaca aagacttctt gcctaaaacc 780
tcatttaaaa aattcattgg ttcaaagctg tgtccactac agatttttga taagatttgc 840
ctcaatatct tgtttatgat gtttggatat gacccaaaaa acttaaatat gagtcgtttg 900
gatgtgtatt tttcacacaa cccagcagga acatctgttc aaaatatgct tcattggagt 960
caggcttatg actggggcag tcctgatctg aacttggttc attataatca gacaacgtct 1020
ccattataca acatgacaaa catgaatgtg gcaactgcaa tttggaatgg taaaagtgac 1080
ttgttggctg accctgaaga cgttaacatt ttacattctg aaatcacaaa ccacatttat 1140
tataaaacta tttcttacta caatcatata gactctttgt ttggattaga tgtctatgat 1200
caagtttacc atgaaatcat tgatattatc caagacaatc tataaagaac catggcgctg 1260
tgtgtttaaa gatctacatc attcctaatg aaatccaatt cttatttttt tttacctgtg 1320
tatgttcttt catttttaaa actaaatatg tagtttttc ctctatattc tcattga    1377
```

<210> 30

<211> 390
<212> PRT
<213> Homo sapiens

<400> 30
Met Trp Tyr Leu Phe Thr Met Met Tyr Phe Ile Arg Ile Leu Gly Ile
1 5 10 15

Thr His Gly Val Phe Gln Asn Tyr Arg Ser Val Lys Pro Glu Ala Asp
20 25 30

Met Asn Ile Ser Gln Ile Ile Ser Tyr Trp Gly Tyr Pro Asp Glu Glu
35 40 45

Tyr Asp Ile Val Thr Glu Asp Gly Tyr Ile Leu Gly Leu Tyr Arg Ile
50 55 60

Pro Tyr Trp Arg Thr Asp Asn Asn Lys Asn Leu Gly Asn Ser Ala Gln
65 70 75 80

Arg Val Val Val Tyr Leu Gln His Gly Leu Leu Thr Ser Ala Ser Ser
85 90 95

Trp Ile Ser Asn Leu Pro Asn Asn Ser Leu Gly Phe Ile Leu Ala Asp
100 105 110

Ala Gly Tyr Asp Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser
115 120 125

Arg Lys His Leu Tyr Leu Glu Thr Ser Ser Lys Glu Phe Trp Ala Phe
130 135 140

Arg Tyr Ala Gln Gly Gly Leu Pro Ala Ser Val Asp Cys Ile Leu Val
145 150 155 160

Lys Lys Arg Gly Glu Lys Asn Ile Tyr His Tyr Ile Phe His Ser Gln
165 170 175

Val His Ser Gln Gly Thr Leu Gly Phe Ile Thr Phe Ser Thr Ile Ser
180 185 190

Lys Ile Ala Glu Arg Ile Lys Ile Phe Phe Ala Leu Ala Pro Ser Ser
195 200 205

Ser Val Lys Tyr Thr Lys Ser Ile Ile Leu Lys Leu Thr Tyr Lys Trp
210 215 220

Lys Ser Ile Gly Asn Lys Asp Phe Leu Pro Lys Thr Ser Phe Lys Lys
225 230 235 240

Phe Ile Gly Ser Lys Leu Cys Pro Leu Gln Ile Phe Asp Lys Ile Cys
245 250 255

Leu Asn Ile Leu Phe Met Met Phe Gly Tyr Asp Pro Lys Asn Leu Asn
260 265 270

Met Ser Arg Leu Asp Val Tyr Phe Ser His Asn Pro Ala Gly Thr Ser

```
        275                 280                 285

Val Gln Asn Met Leu His Trp Ser Gln Ala Tyr Asp Trp Gly Ser Pro
    290                 295                 300

Asp Leu Asn Leu Val His Tyr Asn Gln Thr Thr Ser Pro Leu Tyr Asn
305                 310                 315                 320

Met Thr Asn Met Asn Val Ala Thr Ala Ile Trp Asn Gly Lys Ser Asp
                325                 330                 335

Leu Leu Ala Asp Pro Glu Asp Val Asn Ile Leu His Ser Glu Ile Thr
            340                 345                 350

Asn His Ile Tyr Tyr Lys Thr Ile Ser Tyr Tyr Asn His Ile Asp Ser
        355                 360                 365

Leu Phe Gly Leu Asp Val Tyr Asp Gln Val Tyr His Glu Ile Ile Asp
    370                 375                 380

Ile Ile Gln Asp Asn Leu
385                 390
```

<210> 31
<211> 1260
<212> DNA
<213> Homo sapiens

<400> 31
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attaaatttc ctttcctagg cagatcccaa atgtggcagc ttttagcagc agcatgctgg 60
atgcttcttc ttggatctat gtatggttat gacaagaaag gaaacaatgc aaaccctgaa 120
gctaatatga atattagcca gattatttcc tactggggct accctgatga agaatatgat 180
attgtaaccg aagatggtta tatccttggc ctttatagaa ttccttattg gaggacagac 240
aataataaaa atctaggtaa ttcagctcag agggttgttg tatacttgca acatggtttg 300
cttacatctg ccagcagctg gatttccaat cttcccaaca atagtctggg cttcattctg 360
gcagatgctg gttatgatgt gtggatggga aatagcagag gaaatacctg gtccaggaaa 420
cacttgtacc tagaaacgag ttccaaagaa ttctgggctt tcagttttga tgagatggca 480
aaatatgacc ttccagcctc tattgatttc actgtgaagc aaaccagaca agaggaaata 540
ttttatgtag gccattcaca gggtactact attggtttca taacattttc tactatatca 600
aagatagctg aaagaatcaa aatatttttt gctttagcac cagtttttc cacaaagtac 660
ttaaaaagtc ctttaattag aatgacatac aaatggaagt caatagtcat ggctttttca 720
ggcaacaaag acttcttgcc taaaacctca tttaaaaaat tcattggttc aaagctgtgt 780
ccactacaga tttttgataa gatttgcctc aatatcttgt ttatgatgtt tggatatgac 840
ccaaaaaact taaatatgag tcgtttggat gtgtattttt cacacaaccc agcaggaaca 900
tctgttcaaa atatgcttca ttggagtcag cttttaaatt ctactcattt gaaagcttat 960
gactggggca gtcctgatct gaacttggtt cattataatc agacaacgtc tccattatac 1020
aacatgacaa acatgaatgt ggcaactgca atttggaatg gtaaaagtga cttgttggct 1080
gaccctgaag acgttaacat tttacattct gaaatcacaa accacattta ttataaaact 1140
atttcttact acaatcatat agactctttg tttggattag atgtctatga tcaagtttac 1200
catgaaatca ttgatattat ccaagacaat ctataaagaa ccatggcgct gtgtgtttaa 1260
```

<210> 32
<211> 401
<212> PRT
<213> Homo sapiens

<400> 32

```
Met Trp Gln Leu Leu Ala Ala Ala Cys Trp Met Leu Leu Leu Gly Ser
  1               5                  10                  15

Met Tyr Gly Tyr Asp Lys Lys Gly Asn Asn Ala Asn Pro Glu Ala Asn
            20                  25                  30

Met Asn Ile Ser Gln Ile Ile Ser Tyr Trp Gly Tyr Pro Asp Glu Glu
        35                  40                  45

Tyr Asp Ile Val Thr Glu Asp Gly Tyr Ile Leu Gly Leu Tyr Arg Ile
    50                  55                  60

Pro Tyr Trp Arg Thr Asp Asn Asn Lys Asn Leu Gly Asn Ser Ala Gln
65                  70                  75                  80

Arg Val Val Val Tyr Leu Gln His Gly Leu Leu Thr Ser Ala Ser Ser
                85                  90                  95

Trp Ile Ser Asn Leu Pro Asn Asn Ser Leu Gly Phe Ile Leu Ala Asp
            100                 105                 110

Ala Gly Tyr Asp Val Trp Met Gly Asn Ser Arg Gly Asn Thr Trp Ser
        115                 120                 125

Arg Lys His Leu Tyr Leu Glu Thr Ser Ser Lys Glu Phe Trp Ala Phe
    130                 135                 140

Ser Phe Asp Glu Met Ala Lys Tyr Asp Leu Pro Ala Ser Ile Asp Phe
145                 150                 155                 160

Thr Val Lys Gln Thr Arg Gln Glu Glu Ile Phe Tyr Val Gly His Ser
                165                 170                 175

Gln Gly Thr Thr Ile Gly Phe Ile Thr Phe Ser Thr Ile Ser Lys Ile
            180                 185                 190

Ala Glu Arg Ile Lys Ile Phe Phe Ala Leu Ala Pro Val Phe Ser Thr
        195                 200                 205

Lys Tyr Leu Lys Ser Pro Leu Ile Arg Met Thr Tyr Lys Trp Lys Ser
    210                 215                 220

Ile Val Met Ala Phe Ser Gly Asn Lys Asp Phe Leu Pro Lys Thr Ser
225                 230                 235                 240

Phe Lys Lys Phe Ile Gly Ser Lys Leu Cys Pro Leu Gln Ile Phe Asp
                245                 250                 255

Lys Ile Cys Leu Asn Ile Leu Phe Met Met Phe Gly Tyr Asp Pro Lys
            260                 265                 270

Asn Leu Asn Met Ser Arg Leu Asp Val Tyr Phe Ser His Asn Pro Ala
        275                 280                 285

Gly Thr Ser Val Gln Asn Met Leu His Trp Ser Gln Leu Leu Asn Ser
```

```
    290                 295                 300

Thr His Leu Lys Ala Tyr Asp Trp Gly Ser Pro Asp Leu Asn Leu Val
305                 310                 315                 320

His Tyr Asn Gln Thr Thr Ser Pro Leu Tyr Asn Met Thr Asn Met Asn
                325                 330                 335

Val Ala Thr Ala Ile Trp Asn Gly Lys Ser Asp Leu Leu Ala Asp Pro
            340                 345                 350

Glu Asp Val Asn Ile Leu His Ser Glu Ile Thr Asn His Ile Tyr Tyr
        355                 360                 365

Lys Thr Ile Ser Tyr Tyr Asn His Ile Asp Ser Leu Phe Gly Leu Asp
    370                 375                 380

Val Tyr Asp Gln Val Tyr His Glu Ile Ile Asp Ile Ile Gln Asp Asn
385                 390                 395                 400

Leu
```

<210> 33
<211> 691
<212> DNA
<213> Homo sapiens

<400> 33
gactgaagta ccaactaagt catctccttt caaattatca ccgacaccat catggattca 60
agcaccgcac acagtccggt gtttctggta tttcctccag aaatcactgc ttcagaatat 120
gagtccacag aactttcagc cacgaccttt tcaactcaaa gccccttgca aaaattattt 180
gctagaaaaa tgaaaatctt agggactatc cagatcctgt ttggaattat gacctttttct 240
tttggagtta tcttcctttt cactttgtta aaaccatatc caaggtttcc ctttatattt 300
ctttcaggat atccattctg gggctctgtt ttgttcatta attctggagc cttcctaatt 360
gcagtgaaaa gaaaaaccac agaaactctg ataatattga gccgaataat gaatttttctt 420
agtgccctgg gagcaatagc tggaatcatt ctcctcacat ttggtttcat cctagatcaa 480
aactacattt gtggttattc tcaccaaaat agtcagtgta aggctgttac tgtcctgttc 540
ttgggaattt tgattacatt gatgactttc agcattattg aattattcat ttctctgcct 600
ttctcaattt tggggtgcca ctcagaggat tgtgattgtg aacaatgttg ttgactagca 660
ctgtgagaat aaagatgtgt taaaataaaa a   691

<210> 34
<211> 200
<212> PRT
<213> Homo sapiens

<400> 34
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Met Asp Ser Ser Thr Ala His Ser Pro Val Phe Leu Val Phe Pro Pro
  1               5                  10                  15

Glu Ile Thr Ala Ser Glu Tyr Glu Ser Thr Glu Leu Ser Ala Thr Thr
            20                  25                  30

Phe Ser Thr Gln Ser Pro Leu Gln Lys Leu Phe Ala Arg Lys Met Lys
```

```
         35                  40                  45

Ile Leu Gly Thr Ile Gln Ile Leu Phe Gly Ile Met Thr Phe Ser Phe
     50                  55                  60

Gly Val Ile Phe Leu Phe Thr Leu Leu Lys Pro Tyr Pro Arg Phe Pro
 65                  70                  75                  80

Phe Ile Phe Leu Ser Gly Tyr Pro Phe Trp Gly Ser Val Leu Phe Ile
                85                  90                  95

Asn Ser Gly Ala Phe Leu Ile Ala Val Lys Arg Lys Thr Thr Glu Thr
            100                 105                 110

Leu Ile Ile Leu Ser Arg Ile Met Asn Phe Leu Ser Ala Leu Gly Ala
        115                 120                 125

Ile Ala Gly Ile Ile Leu Leu Thr Phe Gly Phe Ile Leu Asp Gln Asn
    130                 135                 140

Tyr Ile Cys Gly Tyr Ser His Gln Asn Ser Gln Cys Lys Ala Val Thr
145                 150                 155                 160

Val Leu Phe Leu Gly Ile Leu Ile Thr Leu Met Thr Phe Ser Ile Ile
                165                 170                 175

Glu Leu Phe Ile Ser Leu Pro Phe Ser Ile Leu Gly Cys His Ser Glu
            180                 185                 190

Asp Cys Asp Cys Glu Gln Cys Cys
        195                 200
```

<210> 35
<211> 500
<212> DNA
<213> Homo sapiens

<400> 35
ctttcaaatt atcaccgaca ccatcatgga ttcaagcacc gcacacagtc cggtgtttct 60
ggtatttcct ccagaaatca ctgcttcaga atatgagtcc acagaacttt cagccacgac 120
cttttcaact caaagcccct tgcaaaaatt atttgctaga aaaatgaaaa tcttagggac 180
tatccagatc ctgtttggaa ttatgacctt ttcttttgga gttatcttcc ttttcacctt 240
gttaaaacca tatccaaggt ttccctttat atttctttca ggatatccat tctggggctc 300
tgttttgttc attaattctg gagccttcct aattgcagtg aaaagaaaaa ccacagaaac 360
tctgggaatt ttgattacat tgatgacttt cagcattatt gaattattca tttctctgtc 420
tttctcaatt ttggggtgcc actcagagga ttgtgattgt gaacaatgtt gttgactagc 480
actgtgagaa taaagatgtg   500

<210> 36
<211> 149
<212> PRT
<213> Homo sapiens

<400> 36
Met Asp Ser Ser Thr Ala His Ser Pro Val Phe Leu Val Phe Pro Pro

```
  1               5                  10                  15

Glu Ile Thr Ala Ser Glu Tyr Glu Ser Thr Glu Leu Ser Ala Thr Thr
             20                  25                  30

Phe Ser Thr Gln Ser Pro Leu Gln Lys Leu Phe Ala Arg Lys Met Lys
         35                  40                  45

Ile Leu Gly Thr Ile Gln Ile Leu Phe Gly Ile Met Thr Phe Ser Phe
     50                  55                  60

Gly Val Ile Phe Leu Phe Thr Leu Leu Lys Pro Tyr Pro Arg Phe Pro
 65                  70                  75                  80

Phe Ile Phe Leu Ser Gly Tyr Pro Phe Trp Gly Ser Val Leu Phe Ile
                 85                  90                  95

Asn Ser Gly Ala Phe Leu Ile Ala Val Lys Arg Lys Thr Thr Glu Thr
            100                 105                 110

Leu Gly Ile Leu Ile Thr Leu Met Thr Phe Ser Ile Ile Glu Leu Phe
        115                 120                 125

Ile Ser Leu Ser Phe Ser Ile Leu Gly Cys His Ser Glu Asp Cys Asp
    130                 135                 140

Cys Glu Gln Cys Cys
145
```

<210> 37
<211> 1386
<212> DNA
<213> Homo sapiens

<400> 37
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cactctggcc gtggccgacg ttgctcctcc gaagcatggc gccggcggga gttgtaaccc 60
gggctgtccg gagcggggag ctgcccctca caagcatggc gtcagctgaa aatgaagcct 120
gtgctgtgcg gagcgtcgcc tgcccctcac aagcatggcg tctgcagaag gtgctgtgcg 180
gccgctgcgg ggcggccagc tgcccttcac aaacatggcg gccgaggggt gcggggagtg 240
gcggggtaag gatgggaagc cgagcagacg gccccagaac aagcggtcat gtgactggga 300
agatggccgt ctttccttgg cactccagga ataggaacta caaagctgaa tttgcatcat 360
gccgactgga ggctgtacca ttggagtttg gggactatca ccctctgaaa cccataactg 420
tcacagagtc aaagacaaag aaagtgaacc ggaaaggaag cacttcttcc acgtcctcct 480
cctcctccag ctccgtggtg gacccgctga gcagcgtcct cgatgggact gacccctct 540
ccatgtttgc agccactgct gaccccgcag ccttggcagc tgccatggac agctccagaa 600
ggaaacgtga tagagatgat aactccgttg taggatcgga ttttgagcct tggaccaaca 660
aacggggaga aatccttgcc cggtacacca ctaccgaaaa gctgtctatt aatctgttta 720
tgggatctga aaaaggcaaa gctgggactg ccacattggc aatgtcagag aaggtgcgga 780
cccggctgga ggagctggat gactttgagg agggttccca aaaggagctg ttgaacttga 840
ctcagcagga ttacgtgaac cgcatagagg agctcaacca atcgctgaag gatgcctggg 900
cctcagacca gaaagtgaag gctctaaaaa tagtcatcca gtgttcaaag cttctttcag 960
acaccagtgt tattcagttc tacccaagca aatttgtcct tatcaccgac atacttgata 1020
catttggaaa gctcgtgtac gagcgcatct tttccatgtg tgtggatagc cgcagcgtct 1080
taccagatca cttttctcca gagaatgcaa atgacacggc caaggaaaca tgcctaaatt 1140
ggtttttcaa gattgcctcc atcagggaac tcattccaag attttacgtg gaggcatcca 1200
tcctgaaatg taacaaattc ctctccaaaa cgggaatttc agagtgcctg ccccggttga 1260
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catgcatgat cagagggatc ggagacccac tagtgtcggt gtatgcccgt gcctacctgt 1320
gccgggtagg ccatgcgagt cactgcccct gacggcacgg ctgccacccg tctccttgaa 1380
tgttcc 1386

<210> 38
<211> 438
<212> PRT
<213> Homo sapiens

<400> 38
Met Ala Pro Ala Gly Val Val Thr Arg Ala Val Arg Ser Gly Glu Leu
1 5 10 15

Pro Leu Thr Ser Met Ala Ser Ala Glu Asn Glu Ala Cys Ala Val Arg
20 25 30

Ser Val Ala Cys Pro Ser Gln Ala Trp Arg Leu Gln Lys Val Leu Cys
35 40 45

Gly Arg Cys Gly Ala Ala Ser Cys Pro Ser Gln Thr Trp Arg Pro Arg
50 55 60

Gly Ala Gly Ser Gly Gly Val Arg Met Gly Ser Arg Ala Asp Gly Pro
65 70 75 80

Arg Thr Ser Gly His Val Thr Gly Lys Met Ala Val Phe Pro Trp His
85 90 95

Ser Arg Asn Arg Asn Tyr Lys Ala Glu Phe Ala Ser Cys Arg Leu Glu
100 105 110

Ala Val Pro Leu Glu Phe Gly Asp Tyr His Pro Leu Lys Pro Ile Thr
115 120 125

Val Thr Glu Ser Lys Thr Lys Lys Val Asn Arg Lys Gly Ser Thr Ser
130 135 140

Ser Thr Ser Ser Ser Ser Ser Ser Ser Val Val Asp Pro Leu Ser Ser
145 150 155 160

Val Leu Asp Gly Thr Asp Pro Leu Ser Met Phe Ala Ala Thr Ala Asp
165 170 175

Pro Ala Ala Leu Ala Ala Ala Met Asp Ser Ser Arg Arg Lys Arg Asp
180 185 190

Arg Asp Asp Asn Ser Val Val Gly Ser Asp Phe Glu Pro Trp Thr Asn
195 200 205

Lys Arg Gly Glu Ile Leu Ala Arg Tyr Thr Thr Thr Glu Lys Leu Ser
210 215 220

Ile Asn Leu Phe Met Gly Ser Glu Lys Gly Lys Ala Gly Thr Ala Thr
225 230 235 240

Leu Ala Met Ser Glu Lys Val Arg Thr Arg Leu Glu Glu Leu Asp Asp

```
                245                 250                 255

Phe Glu Glu Gly Ser Gln Lys Glu Leu Leu Asn Leu Thr Gln Gln Asp
            260                 265                 270

Tyr Val Asn Arg Ile Glu Glu Leu Asn Gln Ser Leu Lys Asp Ala Trp
        275                 280                 285

Ala Ser Asp Gln Lys Val Lys Ala Leu Lys Ile Val Ile Gln Cys Ser
    290                 295                 300

Lys Leu Leu Ser Asp Thr Ser Val Ile Gln Phe Tyr Pro Ser Lys Phe
305                 310                 315                 320

Val Leu Ile Thr Asp Ile Leu Asp Thr Phe Gly Lys Leu Val Tyr Glu
                325                 330                 335

Arg Ile Phe Ser Met Cys Val Asp Ser Arg Ser Val Leu Pro Asp His
            340                 345                 350

Phe Ser Pro Glu Asn Ala Asn Asp Thr Ala Lys Glu Thr Cys Leu Asn
        355                 360                 365

Trp Phe Phe Lys Ile Ala Ser Ile Arg Glu Leu Ile Pro Arg Phe Tyr
    370                 375                 380

Val Glu Ala Ser Ile Leu Lys Cys Asn Lys Phe Leu Ser Lys Thr Gly
385                 390                 395                 400

Ile Ser Glu Cys Leu Pro Arg Leu Thr Cys Met Ile Arg Gly Ile Gly
                405                 410                 415

Asp Pro Leu Val Ser Val Tyr Ala Arg Ala Tyr Leu Cys Arg Val Gly
            420                 425                 430

His Ala Ser His Cys Pro
        435
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<210> 39
<211> 1514
<212> DNA
<213> Homo sapiens

<400> 39
ctctgtaagg gccagaagtg aggcagggat gggggtgttg gatgcctgga tgggcccaga 60
ggtctgggtc ccccaggggg caggggccaa aggtccagac cccccaagtc cagtgagggc 120
agtagggatt gggttggggg aagataactg ggggaaggcc agggcccggc gcttccagtg 180
gccgctgctg ctgctgtggg cggccgcggc ggggccaggg gcaggacagg aagtacagac 240
agagaacgtg acagtggctg agggtggggt ggctgagatc acctgccgtc tgcaccagta 300
tgatgggtcc atagttgtca tccagaaccc agcccggcag accctcttct tcaatggcac 360
ccgtgccttg aaggatgagc gtttccagct tgaggagttc tccccacgcc gggtgcggat 420
ccggctctca gatgcccgcc tggaggacga ggggggctat ttctgccagc tctacacaga 480
agacacccac caccagattg ccacgctcac ggtactagtg gccccagaga atcctgtggt 540
ggaggtccgg gagcaggcgg tagagggcgg cgaggtggag ctcagctgcc tcgttccgcg 600
gtcccgtccg gctgccaccc tgcgctggta ccgggaccgc aaggagctga aaggagtgag 660
cagcagccag gaaaatggca aggtctggag cgtggcaagc acagtacggt ttcgtgtgga 720

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ccgtaaggac gacggtggta tcatcatctg tgaggcgcag aaccaggcgc tgccctccgg 780
acacagcaag cagacgcagt acgtgctgga tgtgcagtac tcccccacgg cccggattca 840
tgcctcccaa gctgtggtga gggagggaga cacgctggtg ttgacgtgtg ctgtcacggg 900
gaaccccagg ccaaaccaga tccgctggaa ccgcgggaat gagtctttgc cggagagggc 960
ggaggccgtg ggagagacgc tcacgctgcc gggtctggta tccgcggata acggcaccta 1020
cacttgcgag gcgtccaata agcacggcca tgcgagggcg ctctacgtac ttgtggtcta 1080
cgaccctggt gcggtggtag aggctcagac gtcggttccc tatgccattg tgggcggcat 1140
cctggcgctg ctggtgtttc tgatcatatg tgtgctagtg ggcatggtct ggtgctcggt 1200
acggcagaag ggttcctatc tgacccacga agccagtggc ttggatgaac agggagaagc 1260
aagagaagcc ttcctcaatg gcagcgacgg acacaagagg aaagaggaat tcttcatctg 1320
accctatccc cagccagcct aggcctgggc ctgggctggg gtccccccca ctgccagctg 1380
caaggaacca gcaaagacat ttaccagagt ctgggatggt gggcttctcc ccccaccact 1440
aacacctcag acgcttgggc agggatgggg gtgttggatg cctggatctc tgtaagggcc 1500
agaagtgagg gccc                                                   1514
```

<210> 40
<211> 430
<212> PRT
<213> Homo sapiens

<400> 40

```
Met Gly Val Leu Asp Ala Trp Met Gly Pro Glu Val Trp Val Pro Gln
  1               5                  10                  15

Gly Ala Gly Ala Lys Gly Pro Asp Pro Pro Ser Pro Val Arg Ala Val
             20                  25                  30

Gly Ile Gly Leu Gly Glu Asp Asn Trp Gly Lys Ala Arg Ala Arg Arg
         35                  40                  45

Phe Gln Trp Pro Leu Leu Leu Leu Trp Ala Ala Ala Ala Gly Pro Gly
     50                  55                  60

Ala Gly Gln Glu Val Gln Thr Glu Asn Val Thr Val Ala Glu Gly Gly
 65                  70                  75                  80

Val Ala Glu Ile Thr Cys Arg Leu His Gln Tyr Asp Gly Ser Ile Val
                 85                  90                  95

Val Ile Gln Asn Pro Ala Arg Gln Thr Leu Phe Phe Asn Gly Thr Arg
            100                 105                 110

Ala Leu Lys Asp Glu Arg Phe Gln Leu Glu Glu Phe Ser Pro Arg Arg
        115                 120                 125

Val Arg Ile Arg Leu Ser Asp Ala Arg Leu Glu Asp Glu Gly Gly Tyr
    130                 135                 140

Phe Cys Gln Leu Tyr Thr Glu Asp Thr His His Gln Ile Ala Thr Leu
145                 150                 155                 160

Thr Val Leu Val Ala Pro Glu Asn Pro Val Val Glu Val Arg Glu Gln
                165                 170                 175

Ala Val Glu Gly Gly Glu Val Glu Leu Ser Cys Leu Val Pro Arg Ser
            180                 185                 190
```

```
Arg Pro Ala Ala Thr Leu Arg Trp Tyr Arg Asp Arg Lys Glu Leu Lys
        195                 200                 205

Gly Val Ser Ser Ser Gln Glu Asn Gly Lys Val Trp Ser Val Ala Ser
    210                 215                 220

Thr Val Arg Phe Arg Val Asp Arg Lys Asp Asp Gly Gly Ile Ile Ile
225                 230                 235                 240

Cys Glu Ala Gln Asn Gln Ala Leu Pro Ser Gly His Ser Lys Gln Thr
                245                 250                 255

Gln Tyr Val Leu Asp Val Gln Tyr Ser Pro Thr Ala Arg Ile His Ala
            260                 265                 270

Ser Gln Ala Val Val Arg Glu Gly Asp Thr Leu Val Leu Thr Cys Ala
        275                 280                 285

Val Thr Gly Asn Pro Arg Pro Asn Gln Ile Arg Trp Asn Arg Gly Asn
    290                 295                 300

Glu Ser Leu Pro Glu Arg Ala Glu Ala Val Gly Glu Thr Leu Thr Leu
305                 310                 315                 320

Pro Gly Leu Val Ser Ala Asp Asn Gly Thr Tyr Thr Cys Glu Ala Ser
                325                 330                 335

Asn Lys His Gly His Ala Arg Ala Leu Tyr Val Leu Val Val Tyr Asp
            340                 345                 350

Pro Gly Ala Val Val Glu Ala Gln Thr Ser Val Pro Tyr Ala Ile Val
        355                 360                 365

Gly Gly Ile Leu Ala Leu Leu Val Phe Leu Ile Ile Cys Val Leu Val
    370                 375                 380

Gly Met Val Trp Cys Ser Val Arg Gln Lys Gly Ser Tyr Leu Thr His
385                 390                 395                 400

Glu Ala Ser Gly Leu Asp Glu Gln Gly Glu Ala Arg Glu Ala Phe Leu
                405                 410                 415

Asn Gly Ser Asp Gly His Lys Arg Lys Glu Glu Phe Phe Ile
            420                 425                 430
```

<210> 41
<211> 1161
<212> DNA
<213> Homo sapiens

<400> 41
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aggacaggaa gtacagacag agaacgtgac agtggctgag ggtggggtgg ctgagatcac 120
ctgccgtctg caccagtatg atgggtccat agttgtcatc cagaacccag cccggcagac 180
cctcttcttc aatggcaccc gtgccttgaa ggatgagcgt ttccagcttg aggagttctc 240

```
cccacgccgg gtgcggatcc ggctctcaga tgcccgcctg gaggacgagg ggggctattt 300
ctgccagctc tacacagaag acacccacca ccagattgcc acgctcacgg tactagtggc 360
cccagagaat cctgtggtgg aggtccggga gcaggcggta gagggcggcg aggtggagct 420
cagctgcctc gttccgcggt cccgtccggc tgccaccctg cgctggtacc gggaccgcaa 480
ggagctgaaa ggagtgagca gcagccagga aaatggcaag gtctggagcg tggcaagcac 540
agtacggttt cgtgtggacc gtaaggacga cggtggtatc atcatctgtg aggcgcagaa 600
ccaggcgctg ccctccggac acagcaagca gacgcagtac gtgctggatg tgcagtactc 660
ccccacggcc cggattcatg cctcccaagc tgtggtgagg gagggagaca cgctggtgtt 720
gacgtgtgct gtcacgggga accccaggcc aaaccagatc cgctggaacc gcgggaatga 780
gtctttgccg gagagggcgg aggccgtggg agagacgctc acgctgccgg gtctggtatc 840
cgcggataac ggcacctaca cttgcgaggc gtccaataag cacggccatg cgagggcgct 900
ctacgtactt gtggtctacg accctggtgc ggtggtagag gctcagacgt cggttcccta 960
tgccattgtg ggcggcatcc tggcgctgct ggtgtttctg atcatatgtg tgctagtggg 1020
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ggatgaacag ggagaagcaa gagaagcctt cctcaatggc agcgacggac acaagaggaa 1140
agaggaattc ttcatctgac c                                          1161
```

<210> 42
<211> 385
<212> PRT
<213> Homo sapiens

<400> 42

```
Ala Arg Arg Phe Gln Trp Pro Leu Leu Leu Leu Trp Ala Ala Ala Ala
  1               5                  10                  15

Gly Pro Gly Ala Gly Gln Glu Val Gln Thr Glu Asn Val Thr Val Ala
            20                  25                  30

Glu Gly Gly Val Ala Glu Ile Thr Cys Arg Leu His Gln Tyr Asp Gly
        35                  40                  45

Ser Ile Val Val Ile Gln Asn Pro Ala Arg Gln Thr Leu Phe Phe Asn
    50                  55                  60

Gly Thr Arg Ala Leu Lys Asp Glu Arg Phe Gln Leu Glu Glu Phe Ser
65                  70                  75                  80

Pro Arg Arg Val Arg Ile Arg Leu Ser Asp Ala Arg Leu Glu Asp Glu
                85                  90                  95

Gly Gly Tyr Phe Cys Gln Leu Tyr Thr Glu Asp Thr His His Gln Ile
            100                 105                 110

Ala Thr Leu Thr Val Leu Val Ala Pro Glu Asn Pro Val Val Glu Val
        115                 120                 125

Arg Glu Gln Ala Val Glu Gly Gly Glu Val Glu Leu Ser Cys Leu Val
    130                 135                 140

Pro Arg Ser Arg Pro Ala Ala Thr Leu Arg Trp Tyr Arg Asp Arg Lys
145                 150                 155                 160

Glu Leu Lys Gly Val Ser Ser Ser Gln Glu Asn Gly Lys Val Trp Ser
                165                 170                 175
```

```
Val Ala Ser Thr Val Arg Phe Arg Val Asp Arg Lys Asp Asp Gly Gly
            180                 185                 190

Ile Ile Ile Cys Glu Ala Gln Asn Gln Ala Leu Pro Ser Gly His Ser
        195                 200                 205

Lys Gln Thr Gln Tyr Val Leu Asp Val Gln Tyr Ser Pro Thr Ala Arg
    210                 215                 220

Ile His Ala Ser Gln Ala Val Val Arg Glu Gly Asp Thr Leu Val Leu
225                 230                 235                 240

Thr Cys Ala Val Thr Gly Asn Pro Arg Pro Asn Gln Ile Arg Trp Asn
                245                 250                 255

Arg Gly Asn Glu Ser Leu Pro Glu Arg Ala Glu Ala Val Gly Glu Thr
            260                 265                 270

Leu Thr Leu Pro Gly Leu Val Ser Ala Asp Asn Gly Thr Tyr Thr Cys
        275                 280                 285

Glu Ala Ser Asn Lys His Gly His Ala Arg Ala Leu Tyr Val Leu Val
    290                 295                 300

Val Tyr Asp Pro Gly Ala Val Val Glu Ala Gln Thr Ser Val Pro Tyr
305                 310                 315                 320

Ala Ile Val Gly Gly Ile Leu Ala Leu Leu Val Phe Leu Ile Ile Cys
                325                 330                 335

Val Leu Val Gly Met Val Trp Cys Ser Val Arg Gln Lys Gly Ser Tyr
            340                 345                 350

Leu Thr His Glu Ala Ser Gly Leu Asp Glu Gln Gly Glu Ala Arg Glu
        355                 360                 365

Ala Phe Leu Asn Gly Ser Asp Gly His Lys Arg Lys Glu Glu Phe Phe
    370                 375                 380

Ile
385
```

<210> 43
<211> 1782
<212> DNA
<213> Homo sapiens

<400> 43
cagaaccttt tgggattttg ccttcctccc tcccgcatct gagctttgtc tccaccagca 60
acatgagccg ccaattcacc tgcaagtcgg gagctgccgc caaggggggc ttcagtggct 120
gctcagctgt gctctcaggg ggcagctcat cctccttccg ggcagggagc aaagggctca 180
gtgggggctt tggcagccgg agcctcgcag ggagcaaagg gctcagtggg ggctttggca 240
gccggagcct ctacagcctg gggggtgtcc ggagcctcaa tgtggccagt ggcagcggga 300
agagtggagg ctatggattt ggccggggcc gggccagtgg ctttgctgga agcatgtttg 360
gcagtgtggc cctggggcct gtgtgcccaa ctgtatgccc acctggaggc atccaccagg 420
ttaccatcaa tgagagcctc ctggcccccc tcaacgtgga gctggacccc aagatccaga 480

```
aagtgcgtgc ccaggagcga gagcagatca aggctctgaa caacaagttc gcctccttca 540
tcgacaaggt gcggttcctg gagcagcaga accaggtact ggagaccaag tgggagctgc 600
tgcagcagct ggacctgaac aactgcaaga acaacctgga gcccatcctc gagggctaca 660
tcagcaacct gcggaagcag ctggagacgc tgtctgggga cagggtgagg ctggactcgg 720
agctgaggaa tgtgcgggac gtagtggagg actacaagaa gaggtatgag gaggaaatca 780
acaagcggac agcagcagag aacgagtttg tgctgctcaa gaaggatgtg gatgctgctt 840
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tcaggtgtct ctttgaagcc gagatcactc agatccagtc ccacatcagt gacatgtctg 960
tcatcctgtc catggacaac aaccggaacc tagacctgga cagcatcatt gacgaagtcc 1020
gcacccagta tgaggagatt gccttgaaga gtaaggccga ggctgaggcc ctgtaccaga 1080
ccaagttcca agagcttcag ctggcagctg gcaggcatgg ggacgacctc aaaaacacca 1140
agaatgaaat ctcggagctc actcggctca tccagagaat ccgctcagag atcgagaacg 1200
tgaagaagca ggcttccaac ctggagacag ccatcgctga tgctgagcag cggggagaca 1260
acgccctgaa ggatgcccgg gccaagctgg acgagctgga gggcgccctg caccaggcca 1320
aggaggagct ggcacggatg ctgcgcgagt accaggagct catgagcctg aagctggccc 1380
tggacatgga gatcgccacc tatcgcaagc tactggagag cgaggagtgc aggatgtcag 1440
gagaatttcc ctcccctgtc agcatctcca tcatcagcag caccagtggc ggcagtgtca 1500
gtggctatgg cggtgccagt ggtgtcggca gtggcttagg cctgggtgga ggaagcagct 1560
actcctatgg cagtggtctt ggcgttggag gtggcttcag ttccagcagt ggcagagcca 1620
ttgggggtgg cctcagctct gttggaggcg gcagttccac catcaagtac accaccacct 1680
cctcctccag caggaagagc tataagcact aaagtgcgtc tgctagctct cggtcccaca 1740
gtcctcaggc ccctctctgg ctgcagagcc ctctcctcag gt                    1782
```

<210> 44
<211> 549
<212> PRT
<213> Homo sapiens

<400> 44

```
Met Ser Arg Gln Phe Thr Cys Lys Ser Gly Ala Ala Ala Lys Gly Gly
  1               5                  10                  15

Phe Ser Gly Cys Ser Ala Val Leu Ser Gly Gly Ser Ser Ser Ser Phe
             20                  25                  30

Arg Ala Gly Ser Lys Gly Leu Ser Gly Gly Phe Gly Ser Arg Ser Leu
         35                  40                  45

Ala Gly Ser Lys Gly Leu Ser Gly Gly Phe Gly Ser Arg Ser Leu Tyr
     50                  55                  60

Ser Leu Gly Gly Val Arg Ser Leu Asn Val Ala Ser Gly Ser Gly Lys
 65                  70                  75                  80

Ser Gly Gly Tyr Gly Phe Gly Arg Gly Arg Ala Ser Gly Phe Ala Gly
                 85                  90                  95

Ser Met Phe Gly Ser Val Ala Leu Gly Pro Val Cys Pro Thr Val Cys
            100                 105                 110

Pro Pro Gly Gly Ile His Gln Val Thr Ile Asn Glu Ser Leu Leu Ala
        115                 120                 125

Pro Leu Asn Val Glu Leu Asp Pro Lys Ile Gln Lys Val Arg Ala Gln
    130                 135                 140
```

```
Glu Arg Glu Gln Ile Lys Ala Leu Asn Asn Lys Phe Ala Ser Phe Ile
145                 150                 155                 160

Asp Lys Val Arg Phe Leu Glu Gln Gln Asn Gln Val Leu Glu Thr Lys
                165                 170                 175

Trp Glu Leu Leu Gln Gln Leu Asp Leu Asn Asn Cys Lys Asn Asn Leu
            180                 185                 190

Glu Pro Ile Leu Glu Gly Tyr Ile Ser Asn Leu Arg Lys Gln Leu Glu
        195                 200                 205

Thr Leu Ser Gly Asp Arg Val Arg Leu Asp Ser Glu Leu Arg Asn Val
    210                 215                 220

Arg Asp Val Val Glu Asp Tyr Lys Lys Arg Tyr Glu Glu Glu Ile Asn
225                 230                 235                 240

Lys Arg Thr Ala Ala Glu Asn Glu Phe Val Leu Leu Lys Lys Asp Val
                245                 250                 255

Asp Ala Ala Tyr Ala Asn Lys Val Glu Leu Gln Ala Lys Val Glu Ser
            260                 265                 270

Met Asp Gln Glu Ile Lys Phe Phe Arg Cys Leu Phe Glu Ala Glu Ile
        275                 280                 285

Thr Gln Ile Gln Ser His Ile Ser Asp Met Ser Val Ile Leu Ser Met
    290                 295                 300

Asp Asn Asn Arg Asn Leu Asp Leu Asp Ser Ile Ile Asp Glu Val Arg
305                 310                 315                 320

Thr Gln Tyr Glu Glu Ile Ala Leu Lys Ser Lys Ala Glu Ala Glu Ala
                325                 330                 335

Leu Tyr Gln Thr Lys Phe Gln Glu Leu Gln Leu Ala Ala Gly Arg His
            340                 345                 350

Gly Asp Asp Leu Lys Asn Thr Lys Asn Glu Ile Ser Glu Leu Thr Arg
        355                 360                 365

Leu Ile Gln Arg Ile Arg Ser Glu Ile Glu Asn Val Lys Lys Gln Ala
    370                 375                 380

Ser Asn Leu Glu Thr Ala Ile Ala Asp Ala Glu Gln Arg Gly Asp Asn
385                 390                 395                 400

Ala Leu Lys Asp Ala Arg Ala Lys Leu Asp Glu Leu Glu Gly Ala Leu
                405                 410                 415

His Gln Ala Lys Glu Glu Leu Ala Arg Met Leu Arg Glu Tyr Gln Glu
            420                 425                 430

Leu Met Ser Leu Lys Leu Ala Leu Asp Met Glu Ile Ala Thr Tyr Arg
        435                 440                 445
```

```
Lys Leu Leu Glu Ser Glu Glu Cys Arg Met Ser Gly Glu Phe Pro Ser
    450                 455                 460

Pro Val Ser Ile Ser Ile Ile Ser Ser Thr Ser Gly Gly Ser Val Ser
465                 470                 475                 480

Gly Tyr Gly Gly Ala Ser Gly Val Gly Ser Gly Leu Gly Leu Gly Gly
                485                 490                 495

Gly Ser Ser Tyr Ser Tyr Gly Ser Gly Leu Gly Val Gly Gly Gly Phe
            500                 505                 510

Ser Ser Ser Ser Gly Arg Ala Ile Gly Gly Gly Leu Ser Ser Val Gly
        515                 520                 525

Gly Gly Ser Ser Thr Ile Lys Tyr Thr Thr Thr Ser Ser Ser Ser Arg
    530                 535                 540

Lys Ser Tyr Lys His
545
```

<210> 45
<211> 1601
<212> DNA
<213> Homo sapiens

<400> 45

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gagccatgag ccgccaactg acccatttcc cccgcgggga gcgcctgggc ttcagcggtt 120
gctccgcggt cctctctggc gggatcggca gcagctccgc ctcattccgg gcccgggtca 180
agggctcggc ctcctttggc agcaagagcc tctcctgcct tgggggcagc cgaagcctgg 240
cgctcagcgc tgctgcacgg cggggcggcg gccgcctggg cggcttcgtg ggcaccgcct 300
tcggcagcgc cgggctgggg cccaagtgtc cctccgtgtg cccacccggg ggcatccctc 360
aggtcaccgt caacaagagc ctcctggccc cgctcaacgt ggagatggac cccgagatcc 420
agagggtgcg cgcccaggag cgggagcaga tcaaggcgct aaacaacaag ttcgcctcct 480
tcatcgacaa ggtgcggttc ctggagcagc agaatcaggt gctagagacc aagtggaacc 540
tcctacagca gctggacttg aacaactgca ggaagaacct ggagcccatt tatgagggct 600
acatcagcaa cctgcagaag cagctggaga tgctgtctgg ggacggggtg aggctggatt 660
cggagctgag gaacatgcag gatttggtgg aggactacaa gaagagatat gaggtggaga 720
ttaacagacg cacagctgct gagaatgagt ttgtggtgct caagaaggac gtggatgctg 780
cttacatgaa taaggttgag ctccaggcca aggtggactc cttgacagat gagattaaat 840
tcttcaagtg cctttatgaa ggggagatca ctcagatcca gtcccacatc agcgacacgt 900
ccatcgtcct gtcaatggac aacaaccggg atctggacct ggacagcatc attgccgagg 960
tccgtgccca gtacgaggag attgccctaa agagcaaggc cgaggctgag accctgtacc 1020
agaccaagat ccaggagctg caggtcacag caggccagca tggggatgac ctcaagctca 1080
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ccaaggagga gctggcacgg atgctgcgtg agtaccagga gctcgtgagc ctgaagctgg 1320
ccctggatat ggagatcgcc acctaccgca agctgctgga gagcgaggag tgcaggatgt 1380
ctggcgaata tccaaattct gtgagcatct ccgtcatcag cagcaccaat gctggggcag 1440
gaggggctgg cttcagcatg ggctttggcg cctcaagcag ttatagctac aaaactgcag 1500
ctgcagacgt caagaccaaa ggcagctgtg gcagtgagct caaggatccc cttgccaaaa 1560
cctcggggag cagctgtgcc accaaaaagg cctccagatg a                    1601
```

<210> 46
<211> 511
<212> PRT
<213> Homo sapiens

<400> 46
Met Ser Arg Gln Leu Thr His Phe Pro Arg Gly Glu Arg Leu Gly Phe
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Ser Gly Cys Ser Ala Val Leu Ser Gly Gly Ile Gly Ser Ser Ser Ala
20 25 30

Ser Phe Arg Ala Arg Val Lys Gly Ser Ala Ser Phe Gly Ser Lys Ser
35 40 45

Leu Ser Cys Leu Gly Gly Ser Arg Ser Leu Ala Leu Ser Ala Ala Ala
50 55 60

Arg Arg Gly Gly Gly Arg Leu Gly Gly Phe Val Gly Thr Ala Phe Gly
65 70 75 80

Ser Ala Gly Leu Gly Pro Lys Cys Pro Ser Val Cys Pro Pro Gly Gly
85 90 95

Ile Pro Gln Val Thr Val Asn Lys Ser Leu Leu Ala Pro Leu Asn Val
100 105 110

Glu Met Asp Pro Glu Ile Gln Arg Val Arg Ala Gln Glu Arg Glu Gln
115 120 125

Ile Lys Ala Leu Asn Asn Lys Phe Ala Ser Phe Ile Asp Lys Val Arg
130 135 140

Phe Leu Glu Gln Gln Asn Gln Val Leu Glu Thr Lys Trp Asn Leu Leu
145 150 155 160

Gln Gln Leu Asp Leu Asn Asn Cys Arg Lys Asn Leu Glu Pro Ile Tyr
165 170 175

Glu Gly Tyr Ile Ser Asn Leu Gln Lys Gln Leu Glu Met Leu Ser Gly
180 185 190

Asp Gly Val Arg Leu Asp Ser Glu Leu Arg Asn Met Gln Asp Leu Val
195 200 205

Glu Asp Tyr Lys Lys Arg Tyr Glu Val Glu Ile Asn Arg Arg Thr Ala
210 215 220

Ala Glu Asn Glu Phe Val Val Leu Lys Lys Asp Val Asp Ala Ala Tyr
225 230 235 240

Met Asn Lys Val Glu Leu Gln Ala Lys Val Asp Ser Leu Thr Asp Glu
245 250 255

Ile Lys Phe Phe Lys Cys Leu Tyr Glu Gly Glu Ile Thr Gln Ile Gln
260 265 270

```
Ser His Ile Ser Asp Thr Ser Ile Val Leu Ser Met Asp Asn Asn Arg
        275                 280                 285

Asp Leu Asp Leu Asp Ser Ile Ile Ala Glu Val Arg Ala Gln Tyr Glu
    290                 295                 300

Glu Ile Ala Leu Lys Ser Lys Ala Glu Ala Glu Thr Leu Tyr Gln Thr
305                 310                 315                 320

Lys Ile Gln Glu Leu Gln Val Thr Ala Gly Gln His Gly Asp Asp Leu
                325                 330                 335

Lys Leu Thr Lys Ala Glu Ile Ser Glu Leu Asn Arg Leu Ile Gln Arg
            340                 345                 350

Ile Arg Ser Glu Ile Gly Asn Val Lys Lys Gln Cys Ala Asp Leu Glu
        355                 360                 365

Thr Ala Ile Ala Asp Ala Glu Gln Arg Gly Asp Cys Ala Leu Lys Asp
    370                 375                 380

Ala Arg Ala Lys Leu Asp Glu Leu Glu Gly Ala Leu His Gln Ala Lys
385                 390                 395                 400

Glu Glu Leu Ala Arg Met Leu Arg Glu Tyr Gln Glu Leu Val Ser Leu
                405                 410                 415

Lys Leu Ala Leu Asp Met Glu Ile Ala Thr Tyr Arg Lys Leu Leu Glu
            420                 425                 430

Ser Glu Glu Cys Arg Met Ser Gly Glu Tyr Pro Asn Ser Val Ser Ile
        435                 440                 445

Ser Val Ile Ser Ser Thr Asn Ala Gly Ala Gly Gly Ala Gly Phe Ser
    450                 455                 460

Met Gly Phe Gly Ala Ser Ser Ser Tyr Ser Tyr Lys Thr Ala Ala Ala
465                 470                 475                 480

Asp Val Lys Thr Lys Gly Ser Cys Gly Ser Glu Leu Lys Asp Pro Leu
                485                 490                 495

Ala Lys Thr Ser Gly Ser Ser Cys Ala Thr Lys Lys Ala Ser Arg
            500                 505                 510
```

<210> 47
<211> 1606
<212> DNA
<213> Homo sapiens

<400> 47
atgagccgcc aattcaccta caagtcggga gctgctgcca agggggggctt cagcggctgc 60
tccgctgtgc tctcaggggg cagctcatcc tcctaccgag caggggggcaa agggctcagt 120
ggaggcttca gcagtcggag cctttacagc ctgggggggtg cccggagcat ctctttcaat 180
gtggccagtg gcagtgggtg ggcaggaggc tatggatttg gccggggccg ggccagtggc 240
tttgctggca gcatgtttgg cagtgtggcc ttggggtccg tgtgtccgtc gttgtgcccg 300

cccgggggta tccatcaggt caccatcaac aagagcctcc tggcacccct gaacgtggag 360
ctggaccctg aaatccagaa agtgcgtgcc caggagcggg agcagatcaa ggtgctgaac 420
aacaagttcg cctccttcat tgacaaggtg cggttcctgg agcagcagaa ccaggtgctg 480
gagaccaagt gggagctgct acagcagctg gacctgaaca actgcaagaa taacctggag 540
cccatccttg agggctacat cagcaacctg cggaagcagc tggagacgct gtctggggac 600
agggtgaggc tggactcgga gctgaggagc gtgcgcgaag tggtggagga ctacaagaag 660
aggtatgaag aagaaataaa caagcgcaca actgctgaga atgaatttgt ggtgcttaag 720
aaggacgtgg acgcagctta cacgagcaaa gtggagctgc aggccaaggt ggatgccctg 780
gatggagaaa tcaagttctt caagtgtctg tacgaggggg agactgctca gatccagtcc 840
cacatcagcg acacgtccat catcctgtcc atggacaaca accggaacct ggacctggac 900
agcatcattg ctgaggtccg tgcccagtat gaggagatcg cccggaagag caaggccgag 960
gccgaggccc tgtaccagac caagttccag gagctgcagc tagcagccgg ccggcatggg 1020
gatgacctga aacacaccaa aaatgagatc tcagagctga cccgtctcat ccaaagactg 1080
cgctcggaga ttgagagtgt gaagaagcag tgtgccaacc tggagacggc catcgctgac 1140
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ggcgccctgc agcaggccaa ggaggagctg gcacggatgc tgcgcgagta ccaagagctt 1260
ttgagcgtga agctgtccct ggatattgag atcgccacct accgcaagct gctggagggc 1320
gaggagtgca ggatgtccgg agaatatacc aactccgtga gcatttcggt catcaacagc 1380
tccatggccg ggatggcagg cacaggggct ggctttggat tcagcaatgc tggcacctac 1440
ggctactggc ccagctctgt cagcgggggc tacagcatgc tgcctggggg ctgtgtcact 1500
ggcagtggga actgtagccc ccacacacac ccagagggtc agccccactg gaagtttcca 1560
gggtgatctt gggagtgata accccagtaa ttggaggcca gcaggt 1606

<210> 48
<211> 521
<212> PRT
<213> Homo sapiens

<400> 48
Met Ser Arg Gln Phe Thr Tyr Lys Ser Gly Ala Ala Ala Lys Gly Gly
1 5 10 15

Phe Ser Gly Cys Ser Ala Val Leu Ser Gly Gly Ser Ser Ser Ser Tyr
20 25 30

Arg Ala Gly Gly Lys Gly Leu Ser Gly Gly Phe Ser Ser Arg Ser Leu
35 40 45

Tyr Ser Leu Gly Gly Ala Arg Ser Ile Ser Phe Asn Val Ala Ser Gly
50 55 60

Ser Gly Trp Ala Gly Gly Tyr Gly Phe Gly Arg Gly Arg Ala Ser Gly
65 70 75 80

Phe Ala Gly Ser Met Phe Gly Ser Val Ala Leu Gly Ser Val Cys Pro
85 90 95

Ser Leu Cys Pro Pro Gly Gly Ile His Gln Val Thr Ile Asn Lys Ser
100 105 110

Leu Leu Ala Pro Leu Asn Val Glu Leu Asp Pro Glu Ile Gln Lys Val
115 120 125

Arg Ala Gln Glu Arg Glu Gln Ile Lys Val Leu Asn Asn Lys Phe Ala
130 135 140

Ser Phe Ile Asp Lys Val Arg Phe Leu Glu Gln Gln Asn Gln Val Leu
145 150 155 160

Glu Thr Lys Trp Glu Leu Leu Gln Gln Leu Asp Leu Asn Asn Cys Lys
165 170 175

Asn Asn Leu Glu Pro Ile Leu Glu Gly Tyr Ile Ser Asn Leu Arg Lys
180 185 190

Gln Leu Glu Thr Leu Ser Gly Asp Arg Val Arg Leu Asp Ser Glu Leu
195 200 205

Arg Ser Val Arg Glu Val Val Glu Asp Tyr Lys Lys Arg Tyr Glu Glu
210 215 220

Glu Ile Asn Lys Arg Thr Thr Ala Glu Asn Glu Phe Val Val Leu Lys
225 230 235 240

Lys Asp Val Asp Ala Ala Tyr Thr Ser Lys Val Glu Leu Gln Ala Lys
245 250 255

Val Asp Ala Leu Asp Gly Glu Ile Lys Phe Phe Lys Cys Leu Tyr Glu
260 265 270

Gly Glu Thr Ala Gln Ile Gln Ser His Ile Ser Asp Thr Ser Ile Ile
275 280 285

Leu Ser Met Asp Asn Asn Arg Asn Leu Asp Leu Asp Ser Ile Ile Ala
290 295 300

Glu Val Arg Ala Gln Tyr Glu Glu Ile Ala Arg Lys Ser Lys Ala Glu
305 310 315 320

Ala Glu Ala Leu Tyr Gln Thr Lys Phe Gln Glu Leu Gln Leu Ala Ala
325 330 335

Gly Arg His Gly Asp Asp Leu Lys His Thr Lys Asn Glu Ile Ser Glu
340 345 350

Leu Thr Arg Leu Ile Gln Arg Leu Arg Ser Glu Ile Glu Ser Val Lys
355 360 365

Lys Gln Cys Ala Asn Leu Glu Thr Ala Ile Ala Asp Ala Glu Gln Arg
370 375 380

Gly Asp Cys Ala Leu Lys Asp Ala Arg Ala Lys Leu Asp Glu Leu Glu
385 390 395 400

Gly Ala Leu Gln Gln Ala Lys Glu Glu Leu Ala Arg Met Leu Arg Glu
405 410 415

Tyr Gln Glu Leu Leu Ser Val Lys Leu Ser Leu Asp Ile Glu Ile Ala
420 425 430

Thr Tyr Arg Lys Leu Leu Glu Gly Glu Glu Cys Arg Met Ser Gly Glu
435 440 445

Tyr Thr Asn Ser Val Ser Ile Ser Val Ile Asn Ser Ser Met Ala Gly
450 455 460

Met Ala Gly Thr Gly Ala Gly Phe Gly Phe Ser Asn Ala Gly Thr Tyr
465 470 475 480

Gly Tyr Trp Pro Ser Ser Val Ser Gly Gly Tyr Ser Met Leu Pro Gly
485 490 495

Gly Cys Val Thr Gly Ser Gly Asn Cys Ser Pro His Thr His Pro Glu
500 505 510

Gly Gln Pro His Trp Lys Phe Pro Gly
515 520

<210> 49
<211> 448
<212> PRT
<213> Macaca fascicularis

<400> 49
Met Ser Gly Met Tyr Arg Cys Gln Thr Ser Gln Tyr Asn Gly Phe Asn
1 5 10 15

Val Lys Pro Arg Glu Ala Leu Val Gln Leu Ile Val Gln Tyr Pro Pro
20 25 30

Ala Val Glu Pro Ala Phe Leu Glu Ile Arg Gln Gly Gln Asp Arg Ser
35 40 45

Val Thr Met Ser Cys Arg Val Leu Arg Ala Tyr Pro Ile Arg Val Leu
50 55 60

Thr Tyr Glu Trp Arg Leu Gly Asn Lys Leu Leu Arg Thr Gly Gln Phe
65 70 75 80

Asp Ser Gln Glu Tyr Thr Glu Tyr Pro Val Lys Ser Leu Ser Asn Glu
85 90 95

Asn Tyr Gly Val Tyr Asn Cys Ser Ile Ile Asn Glu Ala Gly Ala Gly
100 105 110

Arg Cys Ser Phe Leu Val Thr Gly Lys Ala Tyr Ala Pro Glu Phe Tyr
115 120 125

Tyr Asp Thr Tyr Asn Pro Val Trp Gln Asn Arg His Arg Val Tyr Ser
130 135 140

Tyr Ser Leu Gln Trp Thr Gln Met Asn Pro Asp Ala Val Asp Arg Ile
145 150 155 160

Val Ala Tyr Arg Leu Gly Ile Arg Gln Ala Gly Gln Gln Arg Trp Trp
165 170 175

Glu Gln Glu Ile Lys Ile Asn Gly Asn Ile Gln Lys Gly Glu Leu Ile
180 185 190

```
Thr Tyr Asn Leu Thr Glu Leu Ile Lys Pro Glu Ala Tyr Glu Val Arg
        195                 200                 205

Leu Thr Pro Leu Thr Lys Phe Gly Glu Gly Asp Ser Thr Ile Arg Val
    210                 215                 220

Ile Lys Tyr Ser Ala Pro Val Asn Pro His Leu Arg Glu Phe His Cys
225                 230                 235                 240

Gly Phe Glu Asp Gly Asn Ile Cys Leu Phe Thr Gln Asp Asp Thr Asp
                245                 250                 255

Asn Phe Asp Trp Thr Lys Gln Ser Thr Ala Thr Arg Asn Thr Lys Tyr
            260                 265                 270

Thr Pro Asn Thr Gly Pro Asn Ala Asp Arg Ser Gly Ser Lys Glu Gly
        275                 280                 285

Phe Tyr Met Tyr Ile Glu Thr Ser Arg Pro Arg Leu Glu Gly Glu Lys
    290                 295                 300

Ala Arg Leu Leu Ser Pro Val Phe Ser Ile Ala Pro Lys Asn Pro Tyr
305                 310                 315                 320

Gly Pro Thr Asn Thr Ala Tyr Cys Phe Ser Phe Phe Tyr His Met Tyr
                325                 330                 335

Gly Gln His Ile Gly Val Leu Asn Val Tyr Leu Arg Leu Lys Gly Gln
            340                 345                 350

Thr Thr Ile Glu Asn Pro Leu Trp Ser Ser Ser Gly Asn Lys Gly Gln
        355                 360                 365

Arg Trp Asn Glu Ala His Val Asn Ile Tyr Pro Ile Thr Ser Phe Gln
    370                 375                 38υ

Leu Ile Phe Glu Gly Ile Arg Gly Pro Gly Ile Glu Gly Asp Ile Ala
385                 390                 395                 400

Ile Asp Asp Val Ser Ile Ala Glu Gly Glu Cys Ala Lys Gln Asp Leu
                405                 410                 415

Ala Thr Lys Asn Ser Val Asp Gly Ala Val Gly Ile Leu Val His Ile
            420                 425                 430

Trp Leu Phe Pro Ile Ile Val Leu Ile Ser Ile Leu Ser Pro Arg Arg
        435                 440                 445
```

<210> 50
<211> 273
<212> PRT
<213> Homo sapiens

<400> 50

```
Leu Asn Gln His Asn Ala Val Val Lys Ala Ile Pro Val Arg Arg Val
  1               5                  10                  15

Glu Lys Gly Gln Leu Leu Glu Tyr Ile Leu Thr Asp Leu Arg Val Pro
             20                  25                  30

His Ser Tyr Glu Val Arg Leu Thr Pro Tyr Thr Thr Phe Gly Ala Gly
         35                  40                  45

Asp Met Ala Ser Arg Ile Ile His Tyr Thr Glu Pro Ile Asn Ser Pro
     50                  55                  60

Asn Leu Ser Asp Asn Thr Cys His Phe Glu Asp Glu Lys Ile Cys Gly
 65                  70                  75                  80

Tyr Thr Gln Asp Leu Thr Asp Asn Phe Asp Trp Thr Arg Gln Asn Ala
                 85                  90                  95

Leu Thr Gln Asn Pro Lys Arg Ser Pro Asn Thr Gly Pro Pro Thr Asp
            100                 105                 110

Ile Ser Gly Thr Pro Glu Gly Tyr Tyr Met Phe Ile Glu Thr Ser Arg
        115                 120                 125

Pro Arg Glu Leu Gly Asp Arg Ala Arg Leu Val Ser Pro Leu Tyr Asn
    130                 135                 140

Ala Ser Ala Lys Phe Tyr Cys Val Ser Phe Phe Tyr His Met Tyr Gly
145                 150                 155                 160

Lys His Ile Gly Ser Leu Asn Leu Leu Val Arg Ser Arg Asn Lys Gly
                165                 170                 175

Ala Leu Asp Thr His Ala Trp Ser Leu Ser Gly Asn Lys Gly Asn Val
            180                 185                 190

Trp Gln Gln Ala His Val Pro Ile Ser Pro Ser Gly Pro Phe Gln Ile
        195                 200                 205

Ile Phe Glu Gly Val Arg Gly Pro Gly Tyr Leu Gly Asp Ile Ala Ile
    210                 215                 220

Asp Asp Val Thr Leu Lys Lys Gly Glu Cys Pro Arg Lys Gln Thr Asp
225                 230                 235                 240

Pro Asn Lys Val Val Val Met Pro Gly Ser Gly Ala Pro Cys Gln Ser
                245                 250                 255

Ser Pro Gln Leu Trp Gly Pro Met Ala Ile Phe Leu Leu Ala Leu Gln
            260                 265                 270

Arg
```

<210> 51
<211> 267
<212> PRT
<213> Mus musculus

<400> 51
Met Val Lys Ala Ile Pro Val Arg Arg Val Glu Lys Gly Gln Leu Leu
1 5 10 15

Glu Tyr Ile Leu Thr Asp Leu Arg Val Pro His Ser Tyr Glu Ile Arg
20 25 30

Leu Thr Pro Tyr Thr Thr Phe Gly Ala Gly Asp Met Ala Ser Arg Ile
35 40 45

Ile His Tyr Thr Glu Pro Ile Asn Leu Pro Ser Leu Ser Asp Asn Thr
50 55 60

Cys His Phe Glu Asp Glu Lys Ile Cys Gly Tyr Thr Gln Asp Leu Thr
65 70 75 80

Asp Asn Phe Asp Trp Thr Arg Gln Asn Ala Leu Thr Gln Asn Pro Lys
85 90 95

Arg Ser Pro Asn Thr Gly Pro Pro Thr Asp Ile Ser Gly Thr Pro Glu
100 105 110

Gly Tyr Tyr Met Phe Ile Glu Thr Ser Arg Pro Arg Glu Leu Gly Asp
115 120 125

Arg Ala Arg Leu Val Ser Pro Leu Tyr Asn Ala Ser Ala Lys Phe Tyr
130 135 140

Cys Val Ser Phe Phe Tyr His Met Tyr Gly Lys His Ile Gly Ser Leu
145 150 155 160

Asn Leu Leu Val Arg Ser Arg Asn Lys Gly Thr Leu Asp Thr His Ala
165 170 175

Trp Ser Leu Ser Gly Asn Lys Gly Asn Val Trp Gln Gln Ala His Val
180 185 190

Pro Ile Asn Pro Ser Gly Pro Phe Gln Ile Ile Phe Glu Gly Val Arg
195 200 205

Gly Ser Gly Tyr Leu Gly Asp Ile Ala Ile Asp Asp Val Thr Leu Lys
210 215 220

Lys Gly Glu Cys Pro Arg Arg Gln Met Asp Pro Asn Lys Val Val Val
225 230 235 240

Met Pro Gly Ser Gly Ala Pro Arg Leu Ser Ser Leu Gln Leu Trp Gly
245 250 255

Ser Met Ala Ile Phe Leu Leu Ala Leu Gln Arg
260 265

<210> 52
<211> 496
<212> PRT
<213> Hydra vulgaris

<400> 52
Met Thr Lys Leu Val Leu Ile Leu Leu Ser Val Ala Leu Cys His Ser
1 5 10 15

Phe Pro Glu Glu Glu Asn Asn Asp Pro Gln Gly Ile Leu Phe Gly Gly
20 25 30

Asp Ile Leu Leu Thr Pro Glu Gln Lys Ser Ile Ile Glu Val Gly Gly
35 40 45

Asp Ile Ser Gln Ala Gly Leu Leu Lys Thr Leu Arg Gln Lys Arg Ala
50 55 60

Ala Leu Ser Asn Ser Ser Ile Leu Trp Leu Pro Asn Asn Lys Val Val
65 70 75 80

Pro Trp Ser Ile Thr Lys Gln Leu Glu Asn Thr Ala Glu Ala Thr Phe
85 90 95

Gly Leu Met Ala Ala Phe Arg Glu Trp Glu Glu Arg Ser Cys Leu Thr
100 105 110

Phe Lys Arg Arg Thr Asp Glu Lys Asp Tyr Ile Glu Phe Phe Gln Gly
115 120 125

Ser Gly Cys Trp Ser Tyr Leu Gly Arg Val Gly Gly Leu Gln Asn Ile
130 135 140

Ser Leu Asp Asp Gly Cys Trp Gly Lys Gly Thr Ile Val His Glu Ile
145 150 155 160

Gly His Ala Met Gly Phe Gly His Glu Gln Asn Arg Pro Asp Arg Asp
165 170 175

Gln Tyr Ile Thr Ile Arg Trp Glu Asn Ile Pro Glu Ser Lys Lys His
180 185 190

Asn Phe Arg Leu Tyr Ser Asn Ser Leu Val Asp Ser Leu Asn Ser Pro
195 200 205

Tyr Asp Tyr Arg Ser Tyr Met Gln Tyr Ser Lys Thr Ala Phe Gly Ile
210 215 220

Asn Asp Ser Val Thr Leu Asp Pro Lys Leu Pro Gly Ile Phe Gln Leu
225 230 235 240

Gly Gln Arg Val Gly Phe Thr Glu His Asp Gln Tyr Gln Ala Met Gln
245 250 255

Leu Tyr Arg Cys Gln Gly Lys Thr Thr Arg Pro Thr Thr Phe Phe Pro
260 265 270

```
Arg Tyr Asp Leu Lys Gly Asp Tyr Thr Cys Asp Phe Glu Thr Asp Leu
        275                 280                 285

Cys Gly Phe Thr His Asp Lys Thr Ala Thr Phe Glu Trp Ala Gln Ile
    290                 295                 300

Tyr Gly Glu Thr Pro Ser Arg Gly Thr Gly Pro Asp Ser Asp His Thr
305                 310                 315                 320

Thr Gly Arg Leu Gly Thr Tyr Val Tyr Ile Glu Ala Ser Tyr Pro Gln
                325                 330                 335

Lys Lys Asn Asp Lys Ala Arg Leu Lys Thr Lys Trp Phe Glu Lys Pro
            340                 345                 350

Leu Ser Ala Gln Cys Phe Ser Val Phe Tyr Asn Met Phe Ser Arg Asn
        355                 360                 365

Ala Ser Met Val Gly Glu Phe Asn Ile Tyr Ile Asp Asp Thr Val Thr
    370                 375                 380

Ile Lys Asn Ile Phe Ser Gln Ser Lys Ser Glu Pro Asn Asn Asp Trp
385                 390                 395                 400

Lys Asn Leu Leu Ile Asn Ile Lys Pro Glu Gly Pro Tyr Gln Val Ile
                405                 410                 415

Phe Glu Gly Ile Ile Gly Asn Gly Trp Gln Gly Asp Ile Ala Ile Asp
            420                 425                 430

Asp Ile Ser Ile Thr Ala Gly Tyr Cys Pro Thr Asn Ile Glu Ile Ser
        435                 440                 445

Asp Asn Phe Ser Asn Asp Ser Ser Ser Cys Glu Asp Ile Asn Asp Arg
    450                 455                 460

Glu Ala Glu Tyr Cys Arg Gln Trp Glu Gln Ala Gly Tyr Cys Val Ser
465                 470                 475                 480

Glu Glu Lys Thr Met Lys Leu Tyr Cys Arg Lys Thr Cys Asn Phe Cys
                485                 490                 495
```

<210> 53
<211> 232
<212> PRT
<213> Homo sapiens

<400> 53

```
Met Gln Ala Glu Ile Thr Phe Lys Lys Pro Met Pro Thr Lys Val Val
  1               5                  10                  15

Phe Met Ser Leu Cys Lys Ser Phe Trp Asp Cys Gly Leu Val Ala Leu
```

20 25 30

Asp Asp Ile Thr Ile Gln Leu Gly Ser Cys Ser Ser Ser Glu Lys Leu
35 40 45

Pro Pro Pro Pro Gly Glu Cys Thr Phe Glu Gln Asp Glu Cys Thr Phe
50 55 60

Thr Gln Glu Lys Arg Asn Arg Ser Ser Trp His Arg Arg Arg Gly Glu
65 70 75 80

Thr Pro Thr Ser Tyr Thr Gly Pro Lys Gly Asp His Thr Thr Gly Val
85 90 95

Gly Tyr Tyr Met Tyr Ile Glu Ala Ser His Met Val Tyr Gly Gln Lys
100 105 110

Ala Arg Leu Leu Ser Arg Pro Leu Arg Gly Val Ser Gly Lys His Cys
115 120 125

Leu Thr Phe Phe Tyr His Met Tyr Gly Gly Gly Thr Gly Leu Leu Ser
130 135 140

Val Tyr Leu Lys Lys Glu Glu Asp Ser Glu Glu Ser Leu Leu Trp Arg
145 150 155 160

Arg Arg Gly Glu Gln Ser Ile Ser Trp Leu Arg Ala Leu Ile Glu Tyr
165 170 175

Ser Cys Glu Arg Gln His Gln Ile Ile Phe Glu Ala Ile Arg Gly Val
180 185 190

Ser Ile Arg Ser Asp Ile Ala Ile Asp Asp Val Lys Phe Gln Ala Gly
195 200 205

Pro Cys Gly Glu Met Glu Asp Thr Thr Gln Gln Ser Ser Gly Tyr Ser
210 215 220

Glu Asp Leu Asn Glu Ile Glu Tyr
225 230

<210> 54
<211> 163
<212> PRT
<213> Homo sapiens

<400> 54
Thr Ser Asp Gly Asn Cys Asp Phe Glu Glu Gly Asn Thr Cys Gly Trp
1 5 10 15

His Gln Asp Ser Asn Asp Asp Gly Pro Trp Glu Arg Val Ser Ser Ala
20 25 30

Thr Arg Asn Asp Gly Pro Asn Arg Asp His Thr Thr Gly Asn Gly His
35 40 45

```
Tyr Met Phe Phe Glu Thr Ser Ser Gly Lys Pro Gly Gln Thr Ala Arg
     50                  55                  60

Leu Leu Ser Pro Pro Leu Tyr Glu Asn Arg Ser Thr His Cys Leu Thr
 65                  70                  75                  80

Phe Trp Tyr Tyr Met Tyr Gly Ser Gly Val Gly Thr Leu Asn Val Tyr
                 85                  90                  95

Val Arg Val Asn Asn Gly Pro Gln Asp Thr Leu Leu Trp Ser Arg Ser
            100                 105                 110

Gly Thr Gln Gly Gly Gln Trp Leu Gln Ala Glu Val Ala Leu Ser Thr
        115                 120                 125

Ser Pro Gln Pro Phe Gln Val Val Phe Glu Gly Thr Arg Gly Gly Gly
    130                 135                 140

Pro Ser Gly Tyr Ile Ala Leu Asp Asp Ile Leu Leu Ser Asn Gly Pro
145                 150                 155                 160

Cys Gly Lys
```

<210> 55
<211> 323
<212> PRT
<213> Homo sapiens

<400> 55

```
Phe Glu Asn Gln Asp Tyr Glu Glu Leu Arg Gln Glu Cys Leu Glu Glu
  1               5                  10                  15

Gly Gly Leu Phe Val Asp Pro Leu Phe Pro Ala Lys Pro Ser Ser Leu
             20                  25                  30

Phe Phe Ser Gln Leu Gln Arg Lys Phe Val Val Trp Lys Arg Pro His
         35                  40                  45

Glu Ile Phe Glu Asp Pro Pro Leu Ile Val Gly Gly Ala Ser Arg Thr
     50                  55                  60

Asp Ile Cys Gln Gly Val Leu Gly Asp Cys Trp Leu Leu Ala Ala Leu
 65                  70                  75                  80

Ala Ala Leu Thr Leu Arg Glu Glu Leu Leu Ala Arg Val Ile Pro Lys
                 85                  90                  95

Asp Gln Glu Phe Ser Glu Asn Tyr Ala Gly Ile Tyr His Phe Arg Phe
            100                 105                 110

Trp Arg Tyr Gly Lys Trp Val Asp Val Val Ile Asp Asp Arg Leu Pro
        115                 120                 125

Thr Tyr Asn Gly Asp Leu Leu Phe Met His Ser Asn Ser Arg Asn Glu
    130                 135                 140
```

```
Phe Trp Ser Ala Leu Leu Glu Lys Ala Tyr Ala Lys Leu Arg Gly Cys
145                 150                 155                 160

Tyr Glu Ala Leu Lys Gly Gly Ser Thr Thr Glu Ala Leu Glu Asp Leu
                165                 170                 175

Thr Gly Gly Val Ala Glu Ser Ile Glu Leu Lys Lys Ile Ser Lys Asp
            180                 185                 190

Pro Asp Glu Leu Phe Lys Asp Leu Lys Lys Ala Phe Glu Arg Gly Ser
        195                 200                 205

Leu Met Gly Cys Ser Ile Gly Ala Gly Thr Ala Val Glu Glu Glu Glu
    210                 215                 220

Gln Lys Arg Asn Gly Leu Val Lys Gly His Ala Tyr Ser Val Thr Asp
225                 230                 235                 240

Val Arg Glu Val Asp Gly Arg Arg Arg Gln Lys Leu Leu Arg Leu Arg
                245                 250                 255

Asn Pro Trp Gly Glu Ser Glu Trp Asn Gly Pro Trp Ser Asp Asp Ser
            260                 265                 270

Pro Glu Trp Arg Ser Val Ser Ala Glu Glu Lys Lys Asn Leu Gly Leu
        275                 280                 285

Thr Met Asp Asp Asp Gly Glu Phe Trp Met Ser Phe Glu Asp Phe Leu
    290                 295                 300

Arg His Phe Thr Lys Val Glu Ile Cys Asn Leu Arg Pro Asp Trp Phe
305                 310                 315                 320

Glu Tyr Arg
```

<210> 56
<211> 3002
<212> PRT
<213> Homo sapiens

<400> 56

```
Tyr Phe Ser Arg Glu Lys Pro Leu Arg Gly Arg Tyr Leu Lys Arg Trp
  1               5                  10                  15

Gly Lys Glu Gly Ala Ala Gly Ala Ala Ala Glu Thr Val Gly Ala Thr
             20                  25                  30

Ser Gly Gln Glu Pro Gln Leu Gly Gln Leu Arg Ala Glu Pro Ser Ser
         35                  40                  45

Gly Cys Ser Gly His Asp Trp Glu Gln Pro Pro Pro Pro Pro Arg Glu
     50                  55                  60

Ser Glu Pro Pro Leu Leu His Trp Gln Gly Pro Pro Glu Val Gly Ala
```

```
65                  70                  75                  80

Ala Pro Gly Glu Gly Gly Arg Ser Pro Ala Arg Gly Thr Gly Gly Gly
                 85                  90                  95

Ile Ala Gly Pro Arg Arg Arg Gly Ala Leu Gln Gly Ala Ala Ala Ala
            100                 105                 110

Ala Asp Arg Ala Pro Gly Ala Ala Arg Gly Gly Gly Ser Arg Trp Arg
        115                 120                 125

Leu Gly Ile Met Arg Arg Gly Arg Leu Leu Glu Ile Ala Leu Gly Phe
    130                 135                 140

Thr Val Leu Leu Ala Ser Tyr Thr Ser His Gly Ala Asp Ala Asn Leu
145                 150                 155                 160

Glu Ala Gly Asn Val Lys Glu Thr Arg Ala Ser Arg Ala Lys Arg Arg
                165                 170                 175

Gly Gly Gly Gly His Asp Ala Leu Lys Gly Pro Asn Val Cys Gly Ser
            180                 185                 190

Arg Tyr Asn Ala Tyr Cys Cys Pro Gly Trp Lys Thr Leu Pro Gly Gly
        195                 200                 205

Asn Gln Cys Ile Val Pro Ile Cys Arg His Ser Cys Gly Asp Gly Phe
    210                 215                 220

Cys Ser Arg Pro Asn Met Cys Thr Cys Pro Ser Gly Gln Ile Ala Pro
225                 230                 235                 240

Ser Cys Gly Ser Arg Ser Ile Gln His Cys Asn Ile Arg Cys Met Asn
                245                 250                 255

Gly Gly Ser Cys Ser Asp Asp His Cys Leu Cys Gln Lys Gly Tyr Ile
            260                 265                 270

Gly Thr His Cys Gly Gln Pro Val Cys Glu Ser Gly Cys Leu Asn Gly
        275                 280                 285

Gly Arg Cys Val Ala Pro Asn Arg Cys Ala Cys Thr Tyr Gly Phe Thr
    290                 295                 300

Gly Pro Gln Cys Glu Arg Asp Tyr Arg Thr Gly Pro Cys Phe Thr Val
305                 310                 315                 320

Ile Ser Asn Gln Met Cys Gln Gly Gln Leu Ser Gly Ile Val Cys Thr
                325                 330                 335

Lys Thr Leu Cys Cys Ala Thr Val Gly Arg Ala Trp Gly His Pro Cys
            340                 345                 350

Glu Met Cys Pro Ala Gln Pro His Pro Cys Arg Arg Gly Phe Ile Pro
        355                 360                 365

Asn Ile Arg Thr Gly Ala Cys Gln Asp Val Asp Glu Cys Gln Ala Ile
```

```
    370                 375                 380

Pro Gly Leu Cys Gln Gly Gly Asn Cys Ile Asn Thr Val Gly Ser Phe
385                 390                 395                 400

Glu Cys Lys Cys Pro Ala Gly His Lys Leu Asn Glu Val Ser Gln Lys
                405                 410                 415

Cys Glu Asp Ile Asp Glu Cys Ser Thr Ile Pro Gly Ile Cys Glu Gly
            420                 425                 430

Gly Glu Cys Thr Asn Thr Val Ser Ser Tyr Phe Cys Lys Cys Pro Pro
        435                 440                 445

Gly Phe Tyr Thr Ser Pro Asp Gly Thr Arg Cys Ile Asp Val Arg Pro
    450                 455                 460

Gly Tyr Cys Tyr Thr Ala Leu Thr Asn Gly Arg Cys Ser Asn Gln Leu
465                 470                 475                 480

Pro Gln Ser Ile Thr Lys Met Gln Cys Cys Cys Asp Ala Gly Arg Cys
                485                 490                 495

Trp Ser Pro Gly Val Thr Val Ala Pro Glu Met Cys Pro Ile Arg Ala
            500                 505                 510

Thr Glu Asp Phe Asn Lys Leu Cys Ser Val Pro Met Val Ile Pro Gly
        515                 520                 525

Arg Pro Glu Tyr Pro Pro Pro Pro Leu Gly Pro Ile Pro Pro Val Leu
    530                 535                 540

Pro Val Pro Pro Gly Phe Pro Pro Gly Pro Gln Ile Pro Val Pro Arg
545                 550                 555                 560

Pro Pro Val Glu Tyr Leu Tyr Pro Ser Arg Glu Pro Pro Arg Val Leu
                565                 570                 575

Pro Val Asn Val Thr Asp Tyr Cys Gln Leu Val Arg Tyr Leu Cys Gln
            580                 585                 590

Asn Gly Arg Cys Ile Pro Thr Pro Gly Ser Tyr Arg Cys Glu Cys Asn
        595                 600                 605

Lys Gly Phe Gln Leu Asp Leu Arg Gly Glu Cys Ile Asp Val Asp Glu
    610                 615                 620

Cys Glu Lys Asn Pro Cys Ala Gly Gly Glu Cys Ile Asn Asn Gln Gly
625                 630                 635                 640

Ser Tyr Thr Cys Gln Cys Arg Ala Gly Tyr Gln Ser Thr Leu Thr Arg
                645                 650                 655

Thr Glu Cys Arg Asp Ile Asp Glu Cys Leu Gln Asn Gly Arg Ile Cys
            660                 665                 670

Asn Asn Gly Arg Cys Ile Asn Thr Asp Gly Ser Phe His Cys Val Cys
```

675 680 685

Asn Ala Gly Phe His Val Thr Arg Asp Gly Lys Asn Cys Glu Asp Met
690 695 700

Asp Glu Cys Ser Ile Arg Asn Met Cys Leu Asn Gly Met Cys Ile Asn
705 710 715 720

Glu Asp Gly Ser Phe Lys Cys Ile Cys Lys Pro Gly Phe Gln Leu Ala
725 730 735

Ser Asp Gly Arg Tyr Cys Lys Asp Ile Asn Glu Cys Glu Thr Pro Gly
740 745 750

Ile Cys Met Asn Gly Arg Cys Val Asn Thr Asp Gly Ser Tyr Arg Cys
755 760 765

Glu Cys Phe Pro Gly Leu Ala Val Gly Leu Asp Gly Arg Val Cys Val
770 775 780

Asp Thr His Met Arg Ser Thr Cys Tyr Gly Gly Tyr Lys Arg Gly Gln
785 790 795 800

Cys Ile Lys Pro Leu Phe Gly Ala Val Thr Lys Ser Glu Cys Cys Cys
805 810 815

Ala Ser Thr Glu Tyr Ala Phe Gly Glu Pro Cys Gln Pro Cys Pro Ala
820 825 830

Gln Asn Ser Ala Glu Tyr Gln Ala Leu Cys Ser Ser Gly Pro Gly Met
835 840 845

Thr Ser Ala Gly Ser Asp Ile Asn Glu Cys Ala Leu Asp Pro Asp Ile
850 855 860

Cys Pro Asn Gly Ile Cys Glu Asn Leu Arg Gly Thr Tyr Lys Cys Ile
865 870 875 880

Cys Asn Ser Gly Tyr Glu Val Asp Ser Thr Gly Lys Asn Cys Val Asp
885 890 895

Ile Asn Glu Cys Val Leu Asn Ser Leu Leu Cys Asp Asn Gly Gln Cys
900 905 910

Arg Asn Thr Pro Gly Ser Phe Val Cys Thr Cys Pro Lys Gly Phe Ile
915 920 925

Tyr Lys Pro Asp Leu Lys Thr Cys Glu Asp Ile Asp Glu Cys Glu Ser
930 935 940

Ser Pro Cys Ile Asn Gly Val Cys Lys Asn Ser Pro Gly Ser Phe Ile
945 950 955 960

Cys Glu Cys Ser Ser Glu Ser Thr Leu Asp Pro Thr Lys Thr Ile Cys
965 970 975

Ile Glu Thr Ile Lys Gly Thr Cys Trp Gln Thr Val Ile Asp Gly Arg

```
           980                 985                 990

Cys Glu Ile Asn Ile Asn Gly Ala Thr Leu Lys Ser Gln Cys Cys Ser
        995                1000                1005

Ser Leu Gly Ala Ala Trp Gly Ser Pro Cys Thr Leu Cys Gln Val Asp
   1010                1015                1020

Pro Ile Cys Gly Lys Gly Tyr Ser Arg Ile Lys Gly Thr Gln Cys Glu
1025                1030                1035                1040

Asp Ile Asp Glu Cys Glu Val Phe Pro Gly Val Cys Lys Asn Gly Leu
               1045                1050                1055

Cys Val Asn Thr Arg Gly Ser Phe Lys Cys Gln Cys Pro Ser Gly Met
           1060                1065                1070

Thr Leu Asp Ala Thr Gly Arg Ile Cys Leu Asp Ile Arg Leu Glu Thr
       1075                1080                1085

Cys Phe Leu Arg Tyr Glu Asp Glu Glu Cys Thr Leu Pro Ile Ala Gly
   1090                1095                1100

Arg His Arg Met Asp Ala Cys Cys Cys Ser Val Gly Ala Ala Trp Gly
1105                1110                1115                1120

Thr Glu Glu Cys Glu Glu Cys Pro Met Arg Asn Thr Pro Glu Tyr Glu
               1125                1130                1135

Glu Leu Cys Pro Arg Gly Pro Gly Phe Ala Thr Lys Glu Ile Thr Asn
           1140                1145                1150

Gly Lys Pro Phe Phe Lys Asp Ile Asn Glu Cys Lys Met Ile Pro Ser
       1155                1160                1165

Leu Cys Thr His Gly Lys Cys Arg Asn Thr Ile Gly Ser Phe Lys Cys
   1170                1175                1180

Arg Cys Asp Ser Gly Phe Ala Leu Asp Ser Glu Glu Arg Asn Cys Thr
1185                1190                1195                1200

Asp Ile Asp Glu Cys Arg Ile Ser Pro Asp Leu Cys Gly Arg Gly Gln
               1205                1210                1215

Cys Val Asn Thr Pro Gly Asp Phe Glu Cys Lys Cys Asp Glu Gly Tyr
           1220                1225                1230

Glu Ser Gly Phe Met Met Met Lys Asn Cys Met Asp Ile Asp Glu Cys
       1235                1240                1245

Gln Arg Asp Pro Leu Leu Cys Arg Gly Gly Val Cys His Asn Thr Glu
   1250                1255                1260

Gly Ser Tyr Arg Cys Glu Cys Pro Pro Gly His Gln Leu Ser Pro Asn
1265                1270                1275                1280

Ile Ser Ala Cys Ile Asp Ile Asn Glu Cys Glu Leu Ser Ala His Leu
```

```
             1285                1290                1295

Cys Pro Asn Gly Arg Cys Val Asn Leu Ile Gly Lys Tyr Gln Cys Ala
          1300                1305                1310

Cys Asn Pro Gly Tyr His Ser Thr Pro Asp Arg Leu Phe Cys Val Asp
       1315                1320                1325

Ile Asp Glu Cys Ser Ile Met Asn Gly Gly Cys Glu Thr Phe Cys Thr
   1330                1335                1340

Asn Ser Glu Gly Ser Tyr Glu Cys Ser Cys Gln Pro Gly Phe Ala Leu
1345                1350                1355                1360

Met Pro Asp Gln Arg Ser Cys Thr Asp Ile Asp Glu Cys Glu Asp Asn
               1365                1370                1375

Pro Asn Ile Cys Asp Gly Gly Gln Cys Thr Asn Ile Pro Gly Glu Tyr
          1380                1385                1390

Arg Cys Leu Cys Tyr Asp Gly Phe Met Ala Ser Glu Asp Met Lys Thr
       1395                1400                1405

Cys Val Asp Val Asn Glu Cys Asp Leu Asn Pro Asn Ile Cys Leu Ser
   1410                1415                1420

Gly Thr Cys Glu Asn Thr Lys Gly Ser Phe Ile Cys His Cys Asp Met
1425                1430                1435                1440

Gly Tyr Ser Gly Lys Lys Gly Lys Thr Gly Cys Thr Asp Ile Asn Glu
               1445                1450                1455

Cys Glu Ile Gly Ala His Asn Cys Gly Lys His Ala Val Cys Thr Asn
          1460                1465                1470

Thr Ala Gly Ser Phe Lys Cys Ser Cys Ser Pro Gly Trp Ile Gly Asp
       1475                1480                1485

Gly Ile Lys Cys Thr Asp Leu Asp Glu Cys Ser Asn Gly Thr His Met
   1490                1495                1500

Cys Ser Gln His Ala Asp Cys Lys Asn Thr Met Gly Ser Tyr Arg Cys
1505                1510                1515                1520

Leu Cys Lys Glu Gly Tyr Thr Gly Asp Gly Phe Thr Cys Thr Asp Leu
               1525                1530                1535

Asp Glu Cys Ser Glu Asn Leu Asn Leu Cys Gly Asn Gly Gln Cys Leu
          1540                1545                1550

Asn Ala Pro Gly Gly Tyr Arg Cys Glu Cys Asp Met Gly Phe Val Pro
       1555                1560                1565

Ser Ala Asp Gly Lys Ala Cys Glu Asp Ile Asp Glu Cys Ser Leu Pro
   1570                1575                1580

Asn Ile Cys Val Phe Gly Thr Cys His Asn Leu Pro Gly Leu Phe Arg
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1585 1590 1595 1600

Cys Glu Cys Glu Ile Gly Tyr Glu Leu Asp Arg Ser Gly Gly Asn Cys
1605 1610 1615

Thr Asp Val Asn Glu Cys Leu Asp Pro Thr Thr Cys Ile Ser Gly Asn
1620 1625 1630

Cys Val Asn Thr Pro Gly Ser Tyr Ile Cys Asp Cys Pro Pro Asp Phe
1635 1640 1645

Glu Leu Asn Pro Thr Arg Val Gly Cys Val Asp Thr Arg Ser Gly Asn
1650 1655 1660

Cys Tyr Leu Asp Ile Arg Pro Arg Gly Asp Asn Gly Asp Thr Ala Cys
1665 1670 1675 1680

Ser Asn Glu Ile Gly Val Gly Val Ser Lys Ala Ser Cys Cys Cys Ser
1685 1690 1695

Leu Gly Lys Ala Trp Gly Thr Pro Cys Glu Met Cys Pro Ala Val Asn
1700 1705 1710

Thr Ser Glu Tyr Lys Ile Leu Cys Pro Gly Gly Glu Gly Phe Arg Pro
1715 1720 1725

Asn Pro Ile Thr Val Ile Leu Glu Asp Ile Asp Glu Cys Gln Glu Leu
1730 1735 1740

Pro Gly Leu Cys Gln Gly Gly Lys Cys Ile Asn Thr Phe Gly Ser Phe
1745 1750 1755 1760

Gln Cys Arg Cys Pro Thr Gly Tyr Tyr Leu Asn Glu Asp Thr Arg Val
1765 1770 1775

Cys Asp Asp Val Asn Glu Cys Glu Thr Pro Gly Ile Cys Gly Pro Gly
1780 1785 1790

Thr Cys Tyr Asn Thr Val Gly Asn Tyr Thr Cys Ile Cys Pro Pro Asp
1795 1800 1805

Tyr Met Gln Val Asn Gly Gly Asn Asn Cys Met Asp Met Arg Arg Ser
1810 1815 1820

Leu Cys Tyr Arg Asn Tyr Tyr Ala Asp Asn Gln Thr Cys Asp Gly Glu
1825 1830 1835 1840

Leu Leu Phe Asn Met Thr Lys Lys Met Cys Cys Cys Ser Tyr Asn Ile
1845 1850 1855

Gly Arg Ala Trp Asn Lys Pro Cys Glu Gln Cys Pro Ile Pro Ser Thr
1860 1865 1870

Asp Glu Phe Ala Thr Leu Cys Gly Ser Gln Arg Pro Gly Phe Val Ile
1875 1880 1885

Asp Ile Tyr Thr Gly Leu Pro Val Asp Ile Asp Glu Cys Arg Glu Ile

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   1890                1895                1900

Pro Gly Val Cys Glu Asn Gly Val Cys Ile Asn Met Val Gly Ser Phe
1905                1910                1915                1920

Arg Cys Glu Cys Pro Val Gly Phe Phe Tyr Asn Asp Lys Leu Leu Val
                1925                1930                1935

Cys Glu Asp Ile Asp Glu Cys Gln Asn Gly Pro Val Cys Gln Arg Asn
            1940                1945                1950

Ala Glu Cys Ile Asn Thr Ala Gly Ser Tyr Arg Cys Asp Cys Lys Pro
        1955                1960                1965

Gly Tyr Arg Phe Thr Ser Thr Gly Gln Cys Asn Asp Arg Asn Glu Cys
    1970                1975                1980

Gln Glu Ile Pro Asn Ile Cys Ser His Gly Gln Cys Ile Asp Thr Val
1985                1990                1995                2000

Gly Ser Phe Tyr Cys Leu Cys His Thr Gly Phe Lys Thr Asn Asp Asp
                2005                2010                2015

Gln Thr Met Cys Leu Asp Ile Asn Glu Cys Glu Arg Asp Ala Cys Gly
            2020                2025                2030

Asn Gly Thr Cys Arg Asn Thr Ile Gly Ser Phe Asn Cys Arg Cys Asn
        2035                2040                2045

His Gly Phe Ile Leu Ser His Asn Asn Asp Cys Ile Asp Val Asp Glu
    2050                2055                2060

Cys Ala Ser Gly Asn Gly Asn Leu Cys Arg Asn Gly Gln Cys Ile Asn
2065                2070                2075                2080

Thr Val Gly Ser Phe Gln Cys Gln Cys Asn Glu Gly Tyr Glu Val Ala
                2085                2090                2095

Pro Asp Gly Arg Thr Cys Val Asp Ile Asn Glu Cys Leu Leu Glu Pro
            2100                2105                2110

Arg Lys Cys Ala Pro Gly Thr Cys Gln Asn Leu Asp Gly Ser Tyr Arg
        2115                2120                2125

Cys Ile Cys Pro Pro Gly Tyr Ser Leu Gln Asn Glu Lys Cys Glu Asp
    2130                2135                2140

Ile Asp Glu Cys Val Glu Glu Pro Glu Ile Cys Ala Leu Gly Thr Cys
2145                2150                2155                2160

Ser Asn Thr Glu Gly Ser Phe Lys Cys Leu Cys Pro Glu Gly Phe Ser
                2165                2170                2175

Leu Ser Ser Ser Gly Arg Arg Cys Gln Asp Leu Arg Met Ser Tyr Cys
            2180                2185                2190

Tyr Ala Lys Phe Glu Gly Gly Lys Cys Ser Ser Pro Lys Ser Arg Asn
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2195 2200 2205

His Ser Lys Gln Glu Cys Cys Cys Ala Leu Lys Gly Glu Gly Trp Gly
2210 2215 2220

Asp Pro Cys Glu Leu Cys Pro Thr Glu Pro Asp Glu Ala Phe Arg Gln
2225 2230 2235 2240

Ile Cys Pro Tyr Gly Ser Gly Ile Ile Val Gly Pro Asp Asp Ser Ala
2245 2250 2255

Val Asp Met Asp Glu Cys Lys Glu Pro Asp Val Cys Lys His Gly Gln
2260 2265 2270

Cys Ile Asn Thr Asp Gly Ser Tyr Arg Cys Glu Cys Pro Phe Gly Tyr
2275 2280 2285

Thr Leu Ala Gly Asn Glu Cys Val Asp Thr Asp Glu Cys Ser Val Gly
2290 2295 2300

Asn Pro Cys Gly Asn Gly Thr Cys Lys Asn Val Ile Gly Gly Phe Glu
2305 2310 2315 2320

Cys Thr Cys Glu Glu Gly Phe Glu Pro Gly Pro Met Met Thr Cys Glu
2325 2330 2335

Asp Ile Asn Glu Cys Ala Gln Asn Pro Leu Leu Cys Ala Phe Arg Cys
2340 2345 2350

Val Asn Thr Tyr Gly Ser Tyr Glu Cys Lys Cys Pro Val Gly Tyr Val
2355 2360 2365

Leu Arg Glu Asp Arg Arg Met Cys Lys Asp Glu Asp Glu Cys Glu Glu
2370 2375 2380

Gly Lys His Asp Cys Thr Glu Lys Gln Met Glu Cys Lys Asn Leu Ile
2385 2390 2395 2400

Gly Thr Tyr Met Cys Ile Cys Gly Pro Gly Tyr Gln Arg Arg Pro Asp
2405 2410 2415

Gly Glu Gly Cys Val Asp Glu Asn Glu Cys Gln Thr Lys Pro Gly Ile
2420 2425 2430

Cys Glu Asn Gly Arg Cys Leu Asn Thr Arg Gly Ser Tyr Thr Cys Glu
2435 2440 2445

Cys Asn Asp Gly Phe Thr Ala Ser Pro Asn Gln Asp Glu Cys Leu Asp
2450 2455 2460

Asn Arg Glu Gly Tyr Cys Phe Thr Glu Val Leu Gln Asn Met Cys Gln
2465 2470 2475 2480

Ile Gly Ser Ser Asn Arg Asn Pro Val Thr Lys Ser Glu Cys Cys Cys
2485 2490 2495

Asp Gly Gly Arg Gly Trp Gly Pro His Cys Glu Ile Cys Pro Phe Gln

2500 2505 2510

Gly Thr Val Ala Phe Lys Lys Leu Cys Pro His Gly Arg Gly Phe Met
2515 2520 2525

Thr Asn Gly Ala Asp Ile Asp Glu Cys Lys Val Ile His Asp Val Cys
2530 2535 2540

Arg Asn Gly Glu Cys Val Asn Asp Arg Gly Ser Tyr His Cys Ile Cys
2545 2550 2555 2560

Lys Thr Gly Tyr Thr Pro Asp Ile Thr Gly Thr Ser Cys Val Asp Leu
2565 2570 2575

Asn Glu Cys Asn Gln Ala Pro Lys Pro Cys Asn Phe Ile Cys Lys Asn
2580 2585 2590

Thr Glu Gly Ser Tyr Gln Cys Ser Cys Pro Lys Gly Tyr Ile Leu Gln
2595 2600 2605

Glu Asp Gly Arg Ser Cys Lys Asp Leu Asp Glu Cys Ala Thr Lys Gln
2610 2615 2620

His Asn Cys Gln Phe Leu Cys Val Asn Thr Ile Gly Gly Phe Thr Cys
2625 2630 2635 2640

Lys Cys Pro Pro Gly Phe Thr Gln His His Thr Ser Cys Ile Asp Asn
2645 2650 2655

Asn Glu Cys Thr Ser Asp Ile Asn Leu Cys Gly Ser Lys Gly Ile Cys
2660 2665 2670

Gln Asn Thr Pro Gly Ser Phe Thr Cys Glu Cys Gln Arg Gly Phe Ser
2675 2680 2685

Leu Asp Gln Thr Gly Ser Ser Cys Glu Asp Val Asp Glu Cys Glu Gly
2690 2695 2700

Asn His Arg Cys Gln His Gly Cys Gln Asn Ile Ile Gly Gly Tyr Arg
2705 2710 2715 2720

Cys Ser Cys Pro Gln Gly Tyr Leu Gln His Tyr Gln Trp Asn Gln Cys
2725 2730 2735

Val Asp Glu Asn Glu Cys Leu Ser Ala His Ile Cys Gly Gly Ala Ser
2740 2745 2750

Cys His Asn Thr Leu Gly Ser Tyr Lys Cys Met Cys Pro Ala Gly Phe
2755 2760 2765

Gln Tyr Glu Gln Phe Ser Gly Gly Cys Gln Asp Ile Asn Glu Cys Gly
2770 2775 2780

Ser Ala Gln Ala Pro Cys Ser Tyr Gly Cys Ser Asn Thr Glu Gly Gly
2785 2790 2795 2800

Tyr Leu Cys Gly Cys Pro Pro Gly Tyr Phe Arg Ile Gly Gln Gly His

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              2805                2810                2815

Cys Val Ser Gly Met Gly Met Gly Arg Gly Asn Pro Glu Pro Pro Val
          2820                2825                2830

Ser Gly Glu Met Asp Asp Asn Ser Leu Ser Pro Glu Ala Cys Tyr Glu
       2835                2840                2845

Cys Lys Ile Asn Gly Tyr Pro Lys Arg Gly Arg Lys Arg Arg Ser Thr
   2850                2855                2860

Asn Glu Thr Asp Ala Ser Asn Ile Glu Asp Gln Ser Glu Thr Glu Ala
2865                2870                2875                2880

Asn Val Ser Leu Ala Ser Trp Asp Val Glu Lys Thr Ala Ile Phe Ala
               2885                2890                2895

Phe Asn Ile Ser His Val Ser Asn Lys Val Arg Ile Leu Glu Leu Leu
          2900                2905                2910

Pro Ala Leu Thr Thr Leu Thr Asn His Asn Arg Tyr Leu Ile Glu Ser
       2915                2920                2925

Gly Asn Glu Asp Gly Phe Phe Lys Ile Asn Gln Lys Glu Gly Ile Ser
   2930                2935                2940

Tyr Leu His Phe Thr Lys Lys Lys Pro Val Ala Gly Thr Tyr Ser Leu
2945                2950                2955                2960

Gln Ile Ser Ser Thr Pro Leu Tyr Lys Lys Lys Glu Leu Asn Gln Leu
               2965                2970                2975

Glu Asp Lys Tyr Asp Lys Asp Tyr Leu Ser Gly Glu Leu Gly Asp Asn
          2980                2985                2990

Leu Lys Met Lys Ile Gln Val Leu Leu His
       2995                3000


<210> 57
<211> 2871
<212> PRT
<213> Homo sapiens

<400> 57
Met Arg Arg Gly Arg Leu Leu Glu Ile Ala Leu Gly Phe Thr Val Leu
  1               5                  10                  15

Leu Ala Ser Tyr Thr Ser His Gly Ala Asp Ala Asn Leu Glu Ala Gly
             20                  25                  30

Asn Val Lys Glu Thr Arg Ala Ser Arg Ala Lys Arg Arg Gly Gly Gly
         35                  40                  45

Gly His Asp Ala Leu Lys Gly Pro Asn Val Cys Gly Ser Arg Tyr Asn
     50                  55                  60
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Ala Tyr Cys Cys Pro Gly Trp Lys Thr Leu Pro Gly Gly Asn Gln Cys
 65                  70                  75                  80

Ile Val Pro Ile Cys Arg His Ser Cys Gly Asp Gly Phe Cys Ser Arg
                 85                  90                  95

Pro Asn Met Cys Thr Cys Pro Ser Gly Gln Ile Ala Pro Ser Cys Gly
            100                 105                 110

Ser Arg Ser Ile Gln His Cys Asn Ile Arg Cys Met Asn Gly Gly Ser
        115                 120                 125

Cys Ser Asp Asp His Cys Leu Cys Gln Lys Gly Tyr Ile Gly Thr His
    130                 135                 140

Cys Gly Gln Pro Val Cys Glu Ser Gly Cys Leu Asn Gly Gly Arg Cys
145                 150                 155                 160

Val Ala Pro Asn Arg Cys Ala Cys Thr Tyr Gly Phe Thr Gly Pro Gln
                165                 170                 175

Cys Glu Arg Asp Tyr Arg Thr Gly Pro Cys Phe Thr Val Ile Ser Asn
            180                 185                 190

Gln Met Cys Gln Gly Gln Leu Ser Gly Ile Val Cys Thr Lys Gln Leu
        195                 200                 205

Cys Cys Ala Thr Val Gly Arg Ala Trp Gly His Pro Cys Glu Met Cys
    210                 215                 220

Pro Ala Gln Pro His Pro Cys Arg Arg Gly Phe Ile Pro Asn Ile Arg
225                 230                 235                 240

Thr Gly Ala Cys Gln Asp Val Asp Glu Cys Gln Ala Ile Pro Gly Leu
                245                 250                 255

Cys Gln Gly Gly Asn Cys Ile Asn Thr Val Gly Ser Phe Glu Cys Lys
            260                 265                 270

Cys Pro Ala Gly His Lys Leu Asn Glu Val Ser Gln Lys Cys Glu Asp
        275                 280                 285

Ile Asp Glu Cys Ser Thr Ile Pro Gly Ile Cys Glu Gly Gly Glu Cys
    290                 295                 300

Thr Asn Thr Val Ser Ser Tyr Phe Cys Lys Cys Pro Pro Gly Phe Tyr
305                 310                 315                 320

Thr Ser Pro Asp Gly Thr Arg Cys Ile Asp Val Arg Pro Gly Tyr Cys
                325                 330                 335

Tyr Thr Ala Leu Thr Asn Gly Arg Cys Ser Asn Gln Leu Pro Gln Ser
            340                 345                 350

Ile Thr Lys Met Gln Cys Cys Cys Asp Ala Gly Arg Cys Trp Ser Pro
        355                 360                 365
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Gly Val Thr Val Ala Pro Glu Met Cys Pro Ile Arg Ala Thr Glu Asp
    370                 375                 380

Phe Asn Lys Leu Cys Ser Val Pro Met Val Ile Pro Gly Arg Pro Glu
385                 390                 395                 400

Tyr Pro Pro Pro Pro Leu Gly Pro Ile Pro Pro Val Leu Pro Val Pro
                405                 410                 415

Pro Gly Phe Pro Pro Gly Pro Gln Ile Pro Val Pro Arg Pro Pro Val
            420                 425                 430

Glu Tyr Leu Tyr Pro Ser Arg Glu Pro Pro Arg Val Leu Pro Val Asn
        435                 440                 445

Val Thr Asp Tyr Cys Gln Leu Val Arg Tyr Leu Cys Gln Asn Gly Arg
    450                 455                 460

Cys Ile Pro Thr Pro Gly Ser Tyr Arg Cys Glu Cys Asn Lys Gly Phe
465                 470                 475                 480

Gln Leu Asp Leu Arg Gly Glu Cys Ile Asp Val Asp Glu Cys Glu Lys
                485                 490                 495

Asn Pro Cys Ala Gly Gly Glu Cys Ile Asn Asn Gln Gly Ser Tyr Thr
            500                 505                 510

Cys Gln Cys Arg Ala Gly Tyr Gln Ser Thr Leu Thr Arg Thr Glu Cys
        515                 520                 525

Arg Asp Ile Asp Glu Cys Leu Gln Asn Gly Arg Ile Cys Asn Asn Gly
    530                 535                 540

Arg Cys Ile Asn Thr Asp Gly Ser Phe His Cys Val Cys Asn Ala Gly
545                 550                 555                 560

Phe His Val Thr Arg Asp Gly Lys Asn Cys Glu Asp Met Asp Glu Cys
                565                 570                 575

Ser Ile Arg Asn Met Cys Leu Asn Gly Met Cys Ile Asn Glu Asp Gly
            580                 585                 590

Ser Phe Lys Cys Ile Cys Lys Pro Gly Phe Gln Leu Ala Ser Asp Gly
        595                 600                 605

Arg Tyr Cys Lys Asp Ile Asn Glu Cys Glu Thr Pro Gly Ile Cys Met
    610                 615                 620

Asn Gly Arg Cys Val Asn Thr Asp Gly Ser Tyr Arg Cys Glu Cys Phe
625                 630                 635                 640

Pro Gly Leu Ala Val Gly Leu Asp Gly Arg Val Cys Val Asp Thr His
                645                 650                 655

Met Arg Ser Thr Cys Tyr Gly Gly Tyr Lys Arg Gly Gln Cys Ile Lys
            660                 665                 670
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Pro Leu Phe Gly Ala Val Thr Lys Ser Glu Cys Cys Cys Ala Ser Thr
675 680 685

Glu Tyr Ala Phe Gly Glu Pro Cys Gln Pro Cys Pro Ala Gln Asn Ser
690 695 700

Ala Glu Tyr Gln Ala Leu Cys Ser Ser Gly Pro Gly Met Thr Ser Ala
705 710 715 720

Gly Ser Asp Ile Asn Glu Cys Ala Leu Asp Pro Asp Ile Cys Pro Asn
725 730 735

Gly Ile Cys Glu Asn Leu Arg Gly Thr Tyr Lys Cys Ile Cys Asn Ser
740 745 750

Gly Tyr Glu Val Asp Ser Thr Gly Lys Asn Cys Val Asp Ile Asn Glu
755 760 765

Cys Val Leu Asn Ser Leu Leu Cys Asp Asn Gly Gln Cys Arg Asn Thr
770 775 780

Pro Gly Ser Phe Val Cys Thr Cys Pro Lys Gly Phe Ile Tyr Lys Pro
785 790 795 800

Asp Leu Lys Thr Cys Glu Asp Ile Asp Glu Cys Glu Ser Ser Pro Cys
805 810 815

Ile Asn Gly Val Cys Lys Asn Ser Pro Gly Ser Phe Ile Cys Glu Cys
820 825 830

Ser Ser Glu Ser Thr Leu Asp Pro Thr Lys Thr Ile Cys Ile Glu Thr
835 840 845

Ile Lys Gly Thr Cys Trp Gln Thr Val Ile Asp Gly Arg Cys Glu Ile
850 855 860

Asn Ile Asn Gly Ala Thr Leu Lys Ser Gln Cys Cys Ser Ser Leu Gly
865 870 875 880

Ala Ala Trp Gly Ser Pro Cys Thr Leu Cys Gln Val Asp Pro Ile Cys
885 890 895

Gly Lys Gly Tyr Ser Arg Ile Lys Gly Thr Gln Cys Glu Asp Ile Asp
900 905 910

Glu Cys Glu Val Phe Pro Gly Val Cys Lys Asn Gly Leu Cys Val Asn
915 920 925

Thr Arg Gly Ser Phe Lys Cys Gln Cys Pro Ser Gly Met Thr Leu Asp
930 935 940

Ala Thr Gly Arg Ile Cys Leu Asp Ile Arg Leu Glu Thr Cys Phe Leu
945 950 955 960

Arg Tyr Glu Asp Glu Glu Cys Thr Leu Pro Ile Ala Gly Arg His Arg
965 970 975

Met Asp Ala Cys Cys Cys Ser Val Gly Ala Ala Trp Gly Thr Glu Glu
980 985 990

Cys Glu Glu Cys Pro Met Arg Asn Thr Pro Glu Tyr Glu Glu Leu Cys
995 1000 1005

Pro Arg Gly Pro Gly Phe Ala Thr Lys Glu Ile Thr Asn Gly Lys Pro
1010 1015 1020

Phe Phe Lys Asp Ile Asn Glu Cys Lys Met Ile Pro Ser Leu Cys Thr
1025 1030 1035 1040

His Gly Lys Cys Arg Asn Thr Ile Gly Ser Phe Lys Cys Arg Cys Asp
1045 1050 1055

Ser Gly Phe Ala Leu Asp Ser Glu Glu Arg Asn Cys Thr Asp Ile Asp
1060 1065 1070

Glu Cys Arg Ile Ser Pro Asp Leu Cys Gly Arg Gly Gln Cys Val Asn
1075 1080 1085

Thr Pro Gly Asp Phe Glu Cys Lys Cys Asp Glu Gly Tyr Glu Ser Gly
1090 1095 1100

Phe Met Met Met Lys Asn Cys Met Asp Ile Asp Glu Cys Gln Arg Asp
1105 1110 1115 1120

Pro Leu Leu Cys Arg Gly Gly Val Cys His Asn Thr Glu Gly Ser Tyr
1125 1130 1135

Arg Cys Glu Cys Pro Pro Gly His Gln Leu Ser Pro Asn Ile Ser Ala
1140 1145 1150

Cys Ile Asp Ile Asn Glu Cys Glu Leu Ser Ala His Leu Cys Pro Asn
1155 1160 1165

Gly Arg Cys Val Asn Leu Ile Gly Lys Tyr Gln Cys Ala Cys Asn Pro
1170 1175 1180

Gly Tyr His Ser Thr Pro Asp Arg Leu Phe Cys Val Asp Ile Asp Glu
1185 1190 1195 1200

Cys Ser Ile Met Asn Gly Gly Cys Glu Thr Phe Cys Thr Asn Ser Glu
1205 1210 1215

Gly Ser Tyr Glu Cys Ser Cys Gln Pro Gly Phe Ala Leu Met Pro Asp
1220 1225 1230

Gln Arg Ser Cys Thr Asp Ile Asp Glu Cys Glu Asp Asn Pro Asn Ile
1235 1240 1245

Cys Asp Gly Gly Gln Cys Thr Asn Ile Pro Gly Glu Tyr Arg Cys Leu
1250 1255 1260

Cys Tyr Asp Gly Phe Met Ala Ser Glu Asp Met Lys Thr Cys Val Asp
1265 1270 1275 1280

Val Asn Glu Cys Asp Leu Asn Pro Asn Ile Cys Leu Ser Gly Thr Cys
1285 1290 1295

Glu Asn Thr Lys Gly Ser Phe Ile Cys His Cys Asp Met Gly Tyr Ser
1300 1305 1310

Gly Lys Lys Gly Lys Thr Gly Cys Thr Asp Ile Asn Glu Cys Glu Ile
1315 1320 1325

Gly Ala His Asn Cys Gly Lys His Ala Val Cys Thr Asn Thr Ala Gly
1330 1335 1340

Ser Phe Lys Cys Ser Cys Ser Pro Gly Trp Ile Gly Asp Gly Ile Lys
1345 1350 1355 1360

Cys Thr Asp Leu Asp Glu Cys Ser Asn Gly Thr His Met Cys Ser Gln
1365 1370 1375

His Ala Asp Cys Lys Asn Thr Met Gly Ser Tyr Arg Cys Leu Cys Lys
1380 1385 1390

Glu Gly Tyr Thr Gly Asp Gly Phe Thr Cys Thr Asp Leu Asp Glu Cys
1395 1400 1405

Ser Glu Asn Leu Asn Leu Cys Gly Asn Gly Gln Cys Leu Asn Ala Pro
1410 1415 1420

Gly Gly Tyr Arg Cys Glu Cys Asp Met Gly Phe Val Pro Ser Ala Asp
1425 1430 1435 1440

Gly Lys Ala Cys Glu Asp Ile Asp Glu Cys Ser Leu Pro Asn Ile Cys
1445 1450 1455

Val Phe Gly Thr Cys His Asn Leu Pro Gly Leu Phe Arg Cys Glu Cys
1460 1465 1470

Glu Ile Gly Tyr Glu Leu Asp Arg Ser Gly Gly Asn Cys Thr Asp Val
1475 1480 1485

Asn Glu Cys Leu Asp Pro Thr Thr Cys Ile Ser Gly Asn Cys Val Asn
1490 1495 1500

Thr Pro Gly Ser Tyr Ile Cys Asp Cys Pro Pro Asp Phe Glu Leu Asn
1505 1510 1515 1520

Pro Thr Arg Val Gly Cys Val Asp Thr Arg Ser Gly Asn Cys Tyr Leu
1525 1530 1535

Asp Ile Arg Pro Arg Gly Asp Asn Gly Asp Thr Ala Cys Ser Asn Glu
1540 1545 1550

Ile Gly Val Gly Val Ser Lys Ala Ser Cys Cys Cys Ser Leu Gly Lys
1555 1560 1565

Ala Trp Gly Thr Pro Cys Glu Met Cys Pro Ala Val Asn Thr Ser Glu
1570 1575 1580

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Tyr Lys Ile Leu Cys Pro Gly Gly Glu Gly Phe Arg Pro Asn Pro Ile
1585                1590                1595                1600

Thr Val Ile Leu Glu Asp Ile Asp Glu Cys Gln Glu Leu Pro Gly Leu
                1605                1610                1615

Cys Gln Gly Gly Lys Cys Ile Asn Thr Phe Gly Ser Phe Gln Cys Arg
            1620                1625                1630

Cys Pro Thr Gly Tyr Tyr Leu Asn Glu Asp Thr Arg Val Cys Asp Asp
        1635                1640                1645

Val Asn Glu Cys Glu Thr Pro Gly Ile Cys Gly Pro Gly Thr Cys Tyr
    1650                1655                1660

Asn Thr Val Gly Asn Tyr Thr Cys Ile Cys Pro Pro Asp Tyr Met Gln
1665                1670                1675                1680

Val Asn Gly Gly Asn Asn Cys Met Asp Met Arg Arg Ser Leu Cys Tyr
                1685                1690                1695

Arg Asn Tyr Tyr Ala Asp Asn Gln Thr Cys Asp Gly Glu Leu Leu Phe
            1700                1705                1710

Asn Met Thr Lys Lys Met Cys Cys Cys Ser Tyr Asn Ile Gly Arg Ala
        1715                1720                1725

Trp Asn Lys Pro Cys Glu Gln Cys Pro Ile Pro Ser Thr Asp Glu Phe
    1730                1735                1740

Ala Thr Leu Cys Gly Ser Gln Arg Pro Gly Phe Val Ile Asp Ile Tyr
1745                1750                1755                1760

Thr Gly Leu Pro Val Asp Ile Asp Glu Cys Arg Glu Ile Pro Gly Val
                1765                1770                1775

Cys Glu Asn Gly Val Cys Ile Asn Met Val Gly Ser Phe Arg Cys Glu
            1780                1785                1790

Cys Pro Val Gly Phe Phe Tyr Asn Asp Lys Leu Leu Val Cys Glu Asp
        1795                1800                1805

Ile Asp Glu Cys Gln Asn Gly Pro Val Cys Gln Arg Asn Ala Glu Cys
    1810                1815                1820

Ile Asn Thr Ala Gly Ser Tyr Arg Cys Asp Cys Lys Pro Gly Tyr Arg
1825                1830                1835                1840

Phe Thr Ser Thr Gly Gln Cys Asn Asp Arg Asn Glu Cys Gln Glu Ile
                1845                1850                1855

Pro Asn Ile Cys Ser His Gly Gln Cys Ile Asp Thr Val Gly Ser Phe
            1860                1865                1870

Tyr Cys Leu Cys His Thr Gly Phe Lys Thr Asn Asp Asp Gln Thr Met
        1875                1880                1885
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Cys Leu Asp Ile Asn Glu Cys Glu Arg Asp Ala Cys Gly Asn Gly Thr
   1890                1895                1900

Cys Arg Asn Thr Ile Gly Ser Phe Asn Cys Arg Cys Asn His Gly Phe
1905                1910                1915                1920

Ile Leu Ser His Asn Asn Asp Cys Ile Asp Val Asp Glu Cys Ala Ser
                1925                1930                1935

Gly Asn Gly Asn Leu Cys Arg Asn Gly Gln Cys Ile Asn Thr Val Gly
            1940                1945                1950

Ser Phe Gln Cys Gln Cys Asn Glu Gly Tyr Glu Val Ala Pro Asp Gly
        1955                1960                1965

Arg Thr Cys Val Asp Ile Asn Glu Cys Leu Leu Glu Pro Arg Lys Cys
   1970                1975                1980

Ala Pro Gly Thr Cys Gln Asn Leu Asp Gly Ser Tyr Arg Cys Ile Cys
1985                1990                1995                2000

Pro Pro Gly Tyr Ser Leu Gln Asn Glu Lys Cys Glu Asp Ile Asp Glu
                2005                2010                2015

Cys Val Glu Glu Pro Glu Ile Cys Ala Leu Gly Thr Cys Ser Asn Thr
            2020                2025                2030

Glu Gly Ser Phe Lys Cys Leu Cys Pro Glu Gly Phe Ser Leu Ser Ser
        2035                2040                2045

Ser Gly Arg Arg Cys Gln Asp Leu Arg Met Ser Tyr Cys Tyr Ala Lys
   2050                2055                2060

Phe Glu Gly Gly Lys Cys Ser Ser Pro Lys Ser Arg Asn His Ser Lys
2065                2070                2075                2080

Gln Glu Cys Cys Cys Ala Leu Lys Gly Glu Gly Trp Gly Asp Pro Cys
                2085                2090                2095

Glu Leu Cys Pro Thr Glu Pro Asp Glu Ala Phe Arg Gln Ile Cys Pro
            2100                2105                2110

Tyr Gly Ser Gly Ile Ile Val Gly Pro Asp Asp Ser Ala Val Asp Met
        2115                2120                2125

Asp Glu Cys Lys Glu Pro Asp Val Cys Lys His Gly Gln Cys Ile Asn
   2130                2135                2140

Thr Asp Gly Ser Tyr Arg Cys Glu Cys Pro Phe Gly Tyr Thr Leu Ala
2145                2150                2155                2160

Gly Asn Glu Cys Val Asp Thr Asp Glu Cys Ser Val Gly Asn Pro Cys
                2165                2170                2175

Gly Asn Gly Thr Cys Lys Asn Val Ile Gly Gly Phe Glu Cys Thr Cys
            2180                2185                2190
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Glu Glu Gly Phe Glu Pro Gly Pro Met Met Thr Cys Glu Asp Ile Asn
2195 2200 2205

Glu Cys Ala Gln Asn Pro Leu Leu Cys Ala Phe Arg Cys Val Asn Thr
2210 2215 2220

Tyr Gly Ser Tyr Glu Cys Lys Cys Pro Val Gly Tyr Val Leu Arg Glu
2225 2230 2235 2240

Asp Arg Arg Met Cys Lys Asp Glu Asp Glu Cys Glu Glu Gly Lys His
2245 2250 2255

Asp Cys Thr Glu Lys Gln Met Glu Cys Lys Asn Leu Ile Gly Thr Tyr
2260 2265 2270

Met Cys Ile Cys Gly Pro Gly Tyr Gln Arg Arg Pro Asp Gly Glu Gly
2275 2280 2285

Cys Val Asp Glu Asn Glu Cys Gln Thr Lys Pro Gly Ile Cys Glu Asn
2290 2295 2300

Gly Arg Cys Leu Asn Thr Arg Gly Ser Tyr Thr Cys Glu Cys Asn Asp
2305 2310 2315 2320

Gly Phe Thr Ala Ser Pro Asn Gln Asp Glu Cys Leu Asp Asn Arg Glu
2325 2330 2335

Gly Tyr Cys Phe Thr Glu Val Leu Gln Asn Met Cys Gln Ile Gly Ser
2340 2345 2350

Ser Asn Arg Asn Pro Val Thr Lys Ser Glu Cys Cys Cys Asp Gly Gly
2355 2360 2365

Arg Gly Trp Gly Pro His Cys Glu Ile Cys Pro Phe Gln Gly Thr Val
2370 2375 2380

Ala Phe Lys Lys Leu Cys Pro His Gly Arg Gly Phe Met Thr Asn Gly
2385 2390 2395 2400

Ala Asp Ile Asp Glu Cys Lys Val Ile His Asp Val Cys Arg Asn Gly
2405 2410 2415

Glu Cys Val Asn Asp Arg Gly Ser Tyr His Cys Ile Cys Lys Thr Gly
2420 2425 2430

Tyr Thr Pro Asp Ile Thr Gly Thr Ser Cys Val Asp Leu Asn Glu Cys
2435 2440 2445

Asn Gln Ala Pro Lys Pro Cys Asn Phe Ile Cys Lys Asn Thr Glu Gly
2450 2455 2460

Ser Tyr Gln Cys Ser Cys Pro Lys Gly Tyr Ile Leu Gln Glu Asp Gly
2465 2470 2475 2480

Arg Ser Cys Lys Asp Leu Asp Glu Cys Ala Thr Lys Gln His Asn Cys
2485 2490 2495

Gln Phe Leu Cys Val Asn Thr Ile Gly Gly Phe Thr Cys Lys Cys Pro
2500 2505 2510

Pro Gly Phe Thr Gln His His Thr Ser Cys Ile Asp Asn Asn Glu Cys
2515 2520 2525

Thr Ser Asp Ile Asn Leu Cys Gly Ser Lys Gly Ile Cys Gln Asn Thr
2530 2535 2540

Pro Gly Ser Phe Thr Cys Glu Cys Gln Arg Gly Phe Ser Leu Asp Gln
2545 2550 2555 2560

Thr Gly Ser Ser Cys Glu Asp Val Asp Glu Cys Glu Gly Asn His Arg
2565 2570 2575

Cys Gln His Gly Cys Gln Asn Ile Ile Gly Gly Tyr Arg Cys Ser Cys
2580 2585 2590

Pro Gln Gly Tyr Leu Gln His Tyr Gln Trp Asn Gln Cys Val Asp Glu
2595 2600 2605

Asn Glu Cys Leu Ser Ala His Ile Cys Gly Gly Ala Ser Cys His Asn
2610 2615 2620

Thr Leu Gly Ser Tyr Lys Cys Met Cys Pro Ala Gly Phe Gln Tyr Glu
2625 2630 2635 2640

Gln Phe Ser Gly Gly Cys Gln Asp Ile Asn Glu Cys Gly Ser Ala Gln
2645 2650 2655

Ala Pro Cys Ser Tyr Gly Cys Ser Asn Thr Glu Gly Gly Tyr Leu Cys
2660 2665 2670

Gly Cys Pro Pro Gly Tyr Phe Arg Ile Gly Gln Gly His Cys Val Ser
2675 2680 2685

Gly Met Gly Met Gly Arg Gly Asn Pro Glu Pro Pro Val Ser Gly Glu
2690 2695 2700

Met Asp Asp Asn Ser Leu Ser Pro Glu Ala Cys Tyr Glu Cys Lys Ile
2705 2710 2715 2720

Asn Gly Tyr Pro Lys Arg Gly Arg Lys Arg Arg Ser Thr Asn Glu Thr
2725 2730 2735

Asp Ala Ser Asn Ile Glu Asp Gln Ser Glu Thr Glu Ala Asn Val Ser
2740 2745 2750

Leu Ala Ser Trp Asp Val Glu Lys Thr Ala Ile Phe Ala Phe Asn Ile
2755 2760 2765

Ser His Val Ser Asn Lys Val Arg Ile Leu Glu Leu Leu Pro Ala Leu
2770 2775 2780

Thr Thr Leu Thr Asn His Asn Arg Tyr Leu Ile Glu Ser Gly Asn Glu
2785 2790 2795 2800

```
Asp Gly Phe Phe Lys Ile Asn Gln Lys Glu Gly Ile Ser Tyr Leu His
               2805                2810                2815

Phe Thr Lys Lys Lys Pro Val Ala Gly Thr Tyr Ser Leu Gln Ile Ser
           2820                2825                2830

Ser Thr Pro Leu Tyr Lys Lys Lys Glu Leu Asn Gln Leu Glu Asp Lys
       2835                2840                2845

Tyr Asp Lys Asp Tyr Leu Ser Gly Glu Leu Gly Asp Asn Leu Lys Met
   2850                2855                2860

Lys Ile Gln Val Leu Leu His
2865                2870
```

<210> 58
<211> 1062
<212> PRT
<213> Mus musculus

<400> 58

```
Ile Asp Glu Cys Glu Asn Asn Pro Asp Ile Cys Asp Gly Gly Gln Cys
  1               5                  10                  15

Thr Asn Ile Pro Gly Glu Tyr Arg Cys Leu Cys Tyr Asp Gly Phe Met
             20                  25                  30

Ala Ser Met Asp Met Lys Thr Cys Ile Asp Val Asn Glu Cys Asp Leu
         35                  40                  45

Asn Pro Asn Ile Cys Ile Phe Gly Glu Cys Glu Asn Thr Lys Gly Ser
     50                  55                  60

Phe Ile Cys His Cys Gln Leu Gly Tyr Ser Val Lys Lys Gly Thr Thr
 65                  70                  75                  80

Gly Cys Thr Asp Val Asp Asp Cys Glu Ile Gly Ala His Asn Cys Asp
                 85                  90                  95

Met His Ala Ser Cys Leu Asn Val Pro Gly Ser Phe Lys Cys Ser Cys
            100                 105                 110

Arg Glu Gly Trp Val Gly Asn Gly Ile Lys Ser Ile Asp Leu Asp Glu
        115                 120                 125

Cys Ala Asn Gly Thr His Gln Cys Ser Ile Asn Ala Gln Cys Val Asn
    130                 135                 140

Thr Pro Gly Ser Tyr Gln Cys Ala Cys Ser Glu Gly Phe Thr Gly Asp
145                 150                 155                 160

Gly Phe Thr Cys Ser Asp Val Asp Glu Cys Ala Glu Asn Thr Asn Leu
                165                 170                 175

Cys Glu Asn Gly Gln Cys Leu Asn Val Pro Gly Ala Tyr Arg Cys Glu
            180                 185                 190
```

```
Cys Glu Met Gly Phe Thr Pro Ala Ser Asp Ser Arg Ser Cys Gln Asp
        195                 200                 205

Ile Asp Glu Cys Ser Phe Gln Asn Ile Cys Val Phe Gly Thr Cys Asn
    210                 215                 220

Asn Leu Pro Gly Met Phe His Cys Ile Cys Asp Asp Gly His Glu Leu
225                 230                 235                 240

Asp Arg Thr Gly Gly Asn Cys Thr Asp Ile Asp Glu Cys Ala Asp Pro
                245                 250                 255

Ile Asn Cys Val Asn Gly Leu Cys Val Asn Thr Pro Gly Arg Tyr Glu
            260                 265                 270

Cys Asn Cys Pro Pro Asp Phe Gln Leu Asn Pro Thr Gly Val Gly Cys
        275                 280                 285

Val Asp Asn Arg Val Gly Asn Cys Tyr Leu Lys Phe Gly Pro Arg Gly
    290                 295                 300

Asp Gly Ser Leu Ser Val Asn Thr Glu Val Gly Val Gly Val Ser Arg
305                 310                 315                 320

Ser Ser Cys Cys Cys Ser Leu Gly Lys Ala Trp Gly Asn Pro Cys Glu
                325                 330                 335

Thr Cys Pro Pro Val Asn Ser Thr Glu Tyr Tyr Thr Leu Cys Pro Gly
            340                 345                 350

Gly Glu Gly Phe Arg Pro Asn Pro Ile Thr Ile Ile Leu Glu Asp Ile
        355                 360                 365

Asp Glu Cys Gln Glu Leu Pro Gly Leu Cys Leu Gly Gly Asn Cys Ile
    370                 375                 380

Asn Thr Phe Pro Ser Phe Leu Cys Val Cys His Arg Val Thr Thr Ser
385                 390                 395                 400

Val Arg Lys Pro Ala Ser Val Lys Ile Ser Thr Ser Arg Leu Pro Ile
                405                 410                 415

Pro Ala Val Val Asp Leu Ala Pro Ala His Asn Thr Leu Gly Asn Tyr
            420                 425                 430

Thr Cys Ile Cys Pro Pro Glu Tyr Met Gln Val Asn Gly Gly His Asn
        435                 440                 445

Cys Met Asp Met Arg Lys Ser Phe Cys Tyr Arg Ser Tyr Asn Gly Thr
    450                 455                 460

Thr Cys Glu Asn Glu Leu Pro Phe Asn Val Thr Lys Arg Ile Gly Cys
465                 470                 475                 480

Cys Thr Tyr Asn Gly Arg Lys Ala Trp Asn Lys Pro Cys Glu Pro Cys
                485                 490                 495
```

```
Pro Thr Pro Gly Thr Ala Asp Phe Lys Thr Ile Cys Gly Asn Ile Pro
            500                 505                 510

Gly Phe Thr Phe Asp Ile His Thr Gly Lys Ala Val Asp Ile Asp Glu
        515                 520                 525

Cys Lys Glu Ile Pro Gly Ile Cys Ala Asn Gly Val Cys Ile Asn Gln
    530                 535                 540

Ile Gly Thr Phe Arg Cys Glu Cys Pro Thr Gly Phe Ser Tyr Asn Asp
545                 550                 555                 560

Leu Leu Leu Val Cys Glu Asp Ile Asp Glu Cys Ser Phe Gly Asp Asn
                565                 570                 575

Leu Cys Gln Arg Asn Ala Asp Cys Ile Asn Ser Pro Asp Arg Tyr Arg
            580                 585                 590

Cys Gly Cys Ala Ala Gly Phe Lys Leu Ser Pro Asn Gly Ala Cys Val
        595                 600                 605

Asp Arg Asn Glu Cys Leu Glu Ile Pro Asn Val Cys Ser His Gly Leu
    610                 615                 620

Cys Val Asp Leu Gln Gly Ser Tyr Gln Cys Ile Cys Asn Asn Gly Phe
625                 630                 635                 640

Lys Ala Ser Gln Asp Gln Thr Met Cys Met Asp Val Asp Glu Cys Glu
                645                 650                 655

Arg His Pro Cys Gly Asn Gly Thr Cys Lys Asn Thr Val Gly Ser Tyr
            660                 665                 670

Asn Cys Leu Cys Tyr Pro Gly Phe Glu Leu Thr His Asn Asn Asp Cys
        675                 680                 685

Leu Asp Ile Asp Glu Cys Ser Ser Phe Phe Gly Gln Val Cys Arg Asn
    690                 695                 700

Gly Arg Cys Phe Asn Glu Ile Gly Ser Phe Lys Cys Leu Cys Asn Glu
705                 710                 715                 720

Gly Tyr Val Leu Thr Pro Asp Gly Lys Asn Cys Ile Asp Thr Asn Glu
                725                 730                 735

Cys Val Ala Leu Pro Gly Ser Cys Ser Pro Gly Thr Cys Gln Asn Leu
            740                 745                 750

Glu Gly Ser Phe Arg Cys Ile Cys Pro Pro Gly Tyr Glu Val Arg Ser
        755                 760                 765

Glu Asn Cys Ile Asp Ile Asn Glu Cys Asp Glu Asp Pro Asn Ile Cys
    770                 775                 780

Leu Phe Gly Ser Cys Thr Asn Thr Pro Gly Gly Phe Gln Cys Ile Cys
785                 790                 795                 800
```

```
Pro Pro Gly Phe Val Leu Ser Asp Asn Gly Arg Arg Cys Phe Asp His
                805                 810                 815

Arg Gln Ser Phe Cys Phe Thr Asn Phe Glu Asn Gly Lys Cys Ser Val
            820                 825                 830

Pro Phe Ala Phe Asn Thr Thr Lys Ala Lys Cys Cys Cys Ser Lys Met
        835                 840                 845

Pro Gly Glu Gly Trp Gly Asp Pro Cys Asp Leu Cys Pro Lys Asp Asp
    850                 855                 860

Glu Val Ala Phe Gln Asp Leu Cys Pro Tyr Gly His Gly Thr Val Pro
865                 870                 875                 880

Ser Leu His Asp Thr Arg Glu Asp Val Asn Glu Cys Leu Glu Ser Pro
                885                 890                 895

Gly Ile Cys Ser Asn Gly Gln Cys Ile Asn Thr Asp Gly Ser Phe Arg
            900                 905                 910

Cys Glu Cys Pro Met Gly Tyr Asn Leu Asp His Thr Gly Val Arg Cys
        915                 920                 925

Val Asp Thr Asp Glu Cys Ser Ile Gly Asn Pro Cys Gly Asn Gly Thr
    930                 935                 940

Cys Thr Asn Val Ile Gly Ser Phe Glu Cys Thr Cys Asn Glu Gly Phe
945                 950                 955                 960

Glu Pro Gly Pro Met Thr Asn Cys Glu Asp Ile Asn Glu Cys Ala Gln
                965                 970                 975

Asn Pro Leu Leu Cys Ala Phe Arg Cys Met Asn Thr Phe Gly Ser Cys
            980                 985                 990

Glu Cys Thr Cys Pro Val Arg Tyr Ala Leu Arg Glu Asp Gln Lys Met
        995                1000                1005

Cys Lys Asp Leu Val Glu Cys Ala Glu Gly Leu His Asp Cys Glu Ser
   1010                1015                1020

Arg Gly Met Met Cys Lys Asn Leu Ile Gly Thr Phe Met Cys Ile Cys
1025                1030                1035                1040

Pro Pro Gly Met Ala Arg Arg Pro Asp Gly Glu Gly Cys Val Asp Glu
                1045                1050                1055

Asn Glu Cys Arg Thr Lys
            1060
```

<210> 59
<211> 2871
<212> PRT
<213> Bos taurus

<400> 59

```
Met Arg Arg Gly Gly Leu Leu Glu Val Ala Leu Gly Phe Thr Val Leu
  1               5                  10                  15

Leu Ala Ser Tyr Thr Ser His Gly Ala Asp Thr Asn Leu Glu Ala Gly
             20                  25                  30

Asn Val Lys Glu Thr Arg Ala Asn Arg Ala Lys Arg Arg Gly Gly Gly
         35                  40                  45

Gly His Asn Ala Leu Lys Gly Pro Asn Val Cys Gly Ser Arg Tyr Asn
     50                  55                  60

Ala Tyr Cys Cys Pro Gly Trp Lys Thr Leu Pro Gly Gly Asn Gln Cys
 65                  70                  75                  80

Ile Val Pro Ile Cys Arg His Ser Cys Gly Asp Gly Phe Cys Ser Arg
                 85                  90                  95

Pro Asn Met Cys Thr Cys Pro Ser Gly Gln Ile Ala Pro Ser Cys Gly
            100                 105                 110

Ser Arg Ser Ile Gln His Cys Asn Ile Arg Cys Met Asn Gly Gly Ser
        115                 120                 125

Cys Ser Asp Asp His Cys Leu Cys Gln Lys Gly Tyr Ile Gly Thr His
    130                 135                 140

Cys Gly Gln Pro Val Cys Glu Ser Gly Cys Leu Asn Gly Gly Arg Cys
145                 150                 155                 160

Val Ala Pro Asn Arg Cys Ala Cys Thr Tyr Gly Phe Thr Gly Pro Gln
                165                 170                 175

Cys Glu Arg Asp Tyr Arg Thr Gly Pro Cys Phe Thr Val Ile Ser Asn
            180                 185                 190

Gln Met Cys Gln Gly Gln Leu Ser Gly Ile Val Cys Thr Lys Thr Leu
        195                 200                 205

Cys Cys Ala Thr Val Gly Arg Ala Trp Gly His Pro Cys Glu Met Cys
    210                 215                 220

Pro Ala Gln Pro His Pro Cys Arg Arg Gly Phe Ile Pro Asn Ile Arg
225                 230                 235                 240

Thr Gly Ala Cys Gln Asp Val Asp Glu Cys Gln Ala Ile Pro Gly Leu
                245                 250                 255

Cys Gln Gly Gly Asn Cys Ile Asn Thr Val Gly Ser Phe Glu Cys Lys
            260                 265                 270

Cys Pro Ala Gly His Lys Phe Asn Glu Val Ser Gln Lys Cys Glu Asp
        275                 280                 285

Ile Asp Glu Cys Ser Thr Ile Pro Gly Ile Cys Asp Gly Gly Glu Cys
```

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    290                 295                 300

Thr Asn Thr Val Ser Ser Tyr Phe Cys Lys Cys Pro Pro Gly Phe Tyr
305                 310                 315                 320

Thr Ser Pro Asp Gly Thr Arg Cys Ile Asp Val Arg Pro Gly Tyr Cys
                325                 330                 335

Tyr Thr Ala Leu Ala Asn Gly Arg Cys Ser Asn Gln Leu Pro Gln Ser
            340                 345                 350

Ile Thr Lys Met Gln Cys Cys Cys Asp Ala Gly Arg Cys Trp Ser Pro
        355                 360                 365

Gly Val Thr Val Ala Pro Glu Met Cys Pro Ile Arg Ala Thr Glu Asp
    370                 375                 380

Phe Asn Lys Leu Cys Ser Val Pro Met Val Ile Pro Glu Arg Pro Gly
385                 390                 395                 400

Tyr Pro Pro Pro Pro Leu Gly Pro Val Pro Pro Val Gln Pro Val Pro
                405                 410                 415

Pro Gly Phe Pro Pro Gly Pro Gln Ile Met Ile Pro Arg Pro Pro Val
            420                 425                 430

Glu Tyr Pro Tyr Pro Ser Arg Glu Pro Pro Arg Val Leu Pro Val Asn
        435                 440                 445

Val Thr Asp Tyr Cys Gln Leu Phe Arg Tyr Leu Cys Gln Asn Gly Arg
    450                 455                 460

Cys Ile Pro Thr Pro Gly Ser Tyr Arg Cys Glu Cys Asn Lys Gly Phe
465                 470                 475                 480

Gln Leu Asp Leu Arg Gly Glu Cys Ile Asp Val Asp Glu Cys Glu Lys
                485                 490                 495

Asn Pro Cys Ala Gly Gly Glu Cys Ile Asn Thr Gln Gly Ser Tyr Thr
            500                 505                 510

Cys Gln Cys Arg Pro Gly Tyr Gln Ser Thr Leu Thr Arg Thr Glu Cys
        515                 520                 525

Arg Asp Ile Asp Glu Cys Leu Gln Asn Gly Arg Ile Cys Asn Asn Gly
    530                 535                 540

Arg Cys Ile Asn Thr Asp Gly Ser Phe His Cys Val Cys Asn Ala Gly
545                 550                 555                 560

Phe His Val Thr Arg Asp Gly Lys Asn Cys Glu Asp Met Asp Glu Cys
                565                 570                 575

Ser Ile Arg Asn Met Cys Leu Asn Gly Met Cys Ile Asn Glu Asp Gly
            580                 585                 590

Ser Phe Lys Cys Ile Cys Lys Pro Gly Phe Gln Leu Ala Ser Asp Gly
```

595 600 605

Arg Tyr Cys Lys Asp Ile Asn Glu Cys Glu Thr Leu Gly Ile Cys Met
610 615 620

Asn Gly Arg Cys Val Asn Thr Asp Gly Ser Tyr Arg Cys Glu Cys Phe
625 630 635 640

Pro Gly Leu Ala Val Gly Leu Asp Gly Arg Val Cys Val Asp Thr His
645 650 655

Met Arg Ser Thr Cys Tyr Gly Gly Tyr Lys Arg Gly Gln Cys Val Lys
660 665 670

Pro Leu Phe Gly Ala Val Thr Lys Ser Glu Cys Cys Cys Ala Ser Thr
675 680 685

Glu Tyr Ala Phe Gly Glu Pro Cys Gln Pro Cys Pro Ser Gln Asn Ser
690 695 700

Ala Glu Tyr Gln Ala Leu Cys Ser Ser Gly Pro Gly Ile Thr Ser Ala
705 710 715 720

Gly Ser Asp Ile Asn Glu Cys Ala Leu Asp Pro Asp Ile Cys Pro Asn
725 730 735

Gly Ile Cys Glu Asn Leu Arg Gly Thr Tyr Lys Cys Ile Cys Asn Ser
740 745 750

Gly Tyr Glu Val Asp Ser Thr Gly Lys Asn Cys Val Asp Ile Asn Glu
755 760 765

Cys Val Leu Asn Ser Leu Leu Cys Asp Asn Gly Gln Cys Arg Asn Thr
770 775 780

Pro Gly Ser Phe Val Cys Thr Cys Pro Lys Gly Phe Ile Tyr Lys Pro
785 790 795 800

Glu Leu Lys Thr Cys Glu Asp Ile Asp Glu Cys Glu Ser Ser Pro Cys
805 810 815

Ile Asn Gly Val Cys Lys Asn Ser Pro Gly Ser Phe Ile Cys Glu Cys
820 825 830

Ser Ser Glu Ser Thr Leu Asp Pro Thr Lys Thr Ile Cys Ile Glu Thr
835 840 845

Ile Lys Gly Thr Cys Trp Gln Thr Val Ile Asp Gly Arg Cys Glu Ile
850 855 860

Asn Ile Asn Gly Ala Thr Leu Lys Ser Gln Cys Cys Ser Ser Leu Gly
865 870 875 880

Ala Ala Trp Gly Ser Pro Cys Thr Pro Cys Gln Val Asp Pro Ile Cys
885 890 895

Gly Lys Gly Tyr Ser Arg Ile Lys Gly Thr Gln Cys Glu Asp Ile Asp

```
            900                 905                 910

Glu Cys Glu Val Phe Pro Gly Val Cys Lys Asn Gly Leu Cys Val Asn
        915                 920                 925

Ser Lys Gly Ser Phe Lys Cys Gln Cys Pro Ser Gly Met Thr Leu Asp
    930                 935                 940

Ala Thr Gly Arg Ile Cys Leu Asp Ile Arg Leu Glu Thr Cys Phe Leu
945                 950                 955                 960

Arg Tyr Glu Asp Glu Glu Cys Thr Leu Pro Val Ala Gly Arg His Arg
                965                 970                 975

Met Asp Ala Cys Cys Cys Ser Val Gly Ala Ala Trp Gly Thr Glu Glu
            980                 985                 990

Cys Glu Glu Cys Pro Val Arg Asn Thr Pro Glu Tyr Glu Glu Leu Cys
        995                1000                1005

Pro Arg Gly Pro Gly Phe Ala Thr Lys Glu Ile Thr Asn Gly Lys Arg
   1010                1015                1020

Phe Phe Lys Asp Ile Asn Glu Cys Lys Met Ile Pro Asn Leu Cys Thr
1025                1030                1035                1040

His Gly Lys Cys Arg Asn Thr Ile Gly Ser Phe Lys Cys Arg Cys Asp
                1045                1050                1055

Ser Gly Phe Ala Leu Asp Ser Glu Glu Arg Asn Cys Thr Asp Ile Asp
            1060                1065                1070

Glu Cys Arg Ile Ser Pro Asp Leu Cys Gly Arg Gly Gln Cys Val Asn
        1075                1080                1085

Thr Pro Gly Asp Phe Glu Cys Lys Cys Asp Glu Gly Tyr Glu Ser Gly
   1090                1095                1100

Phe Met Met Met Lys Asn Cys Met Asp Ile Asp Glu Cys Gln Arg Asp
1105                1110                1115                1120

Pro Leu Leu Cys Arg Gly Gly Val Cys Leu Asn Thr Glu Gly Ser Tyr
                1125                1130                1135

Arg Cys Glu Cys Pro Pro Gly His Gln Leu Ala Pro Asn Ile Ser Ala
            1140                1145                1150

Cys Ile Asp Ile Asn Glu Cys Glu Leu Ser Ala His Leu Cys Pro His
        1155                1160                1165

Gly Arg Cys Val Asn Leu Ile Gly Lys Tyr Gln Cys Ala Cys Asn Pro
   1170                1175                1180

Gly Tyr His Ser Thr Pro Asp Arg Leu Phe Cys Val Asp Ile Asp Glu
1185                1190                1195                1200

Cys Ser Ile Met Asn Gly Gly Cys Glu Thr Phe Cys Thr Asn Ser Glu
```

1205 1210 1215

Gly Ser Tyr Glu Cys Ser Cys Gln Pro Gly Phe Ala Leu Met Pro Asp
1220 1225 1230

Gln Arg Ser Cys Thr Asp Ile Asp Glu Cys Glu Asp Asn Pro Asn Ile
1235 1240 1245

Cys Asp Gly Gly Gln Cys Thr Asn Ile Pro Gly Glu Tyr Arg Cys Leu
1250 1255 1260

Cys Tyr Asp Gly Phe Met Ala Ser Glu Asp Met Lys Thr Cys Val Asp
1265 1270 1275 1280

Val Asn Glu Cys Asp Leu Asn Pro Asn Ile Cys Leu Ser Gly Thr Cys
1285 1290 1295

Glu Asn Thr Lys Gly Ser Phe Ile Cys His Cys Asp Met Gly Tyr Ser
1300 1305 1310

Gly Lys Lys Gly Lys Thr Gly Cys Thr Asp Ile Asn Glu Cys Glu Ile
1315 1320 1325

Gly Ala His Asn Cys Asp Arg His Ala Val Cys Thr Asn Thr Ala Gly
1330 1335 1340

Ser Phe Lys Cys Ser Cys Ser Pro Gly Trp Ile Gly Asp Gly Ile Lys
1345 1350 1355 1360

Cys Thr Asp Leu Asp Glu Cys Ser Asn Gly Thr His Met Cys Ser Gln
1365 1370 1375

His Ala Asp Cys Lys Asn Thr Met Gly Ser Tyr Arg Cys Leu Cys Lys
1380 1385 1390

Glu Gly Tyr Thr Gly Asp Gly Phe Thr Cys Thr Asp Leu Asp Glu Cys
1395 1400 1405

Ser Glu Asn Leu Asn Leu Cys Gly Asn Gly Gln Cys Leu Asn Ala Pro
1410 1415 1420

Gly Gly Tyr Arg Cys Glu Cys Asp Met Gly Phe Val Pro Ser Ala Asp
1425 1430 1435 1440

Gly Lys Ala Cys Glu Asp Ile Asp Glu Cys Ser Leu Pro Asn Ile Cys
1445 1450 1455

Val Phe Gly Thr Cys His Asn Leu Pro Gly Leu Phe Arg Cys Glu Cys
1460 1465 1470

Glu Ile Gly Tyr Glu Leu Asp Arg Ser Gly Gly Asn Cys Thr Asp Val
1475 1480 1485

Asn Glu Cys Leu Asp Pro Thr Thr Cys Ile Ser Gly Asn Cys Val Asn
1490 1495 1500

Thr Pro Gly Ser Tyr Thr Cys Asp Cys Pro Pro Asp Phe Glu Leu Asn

1505 1510 1515 1520

Pro Thr Arg Val Gly Cys Val Asp Thr Arg Ser Gly Asn Cys Tyr Leu
1525 1530 1535

Asp Ile Arg Pro Arg Gly Asp Asn Gly Asp Thr Ala Cys Ser Asn Glu
1540 1545 1550

Ile Gly Val Gly Val Ser Lys Ala Ser Cys Cys Cys Ser Leu Gly Lys
1555 1560 1565

Ala Trp Gly Thr Pro Cys Glu Leu Cys Pro Pro Val Asn Thr Ser Glu
1570 1575 1580

Tyr Lys Ile Leu Cys Pro Gly Gly Glu Gly Phe Arg Pro Asn Pro Ile
1585 1590 1595 1600

Thr Val Ile Leu Glu Asp Ile Asp Glu Cys Gln Glu Leu Pro Gly Leu
1605 1610 1615

Cys Gln Gly Gly Lys Cys Ile Asn Thr Phe Gly Ser Phe Gln Cys Arg
1620 1625 1630

Cys Pro Thr Gly Tyr Tyr Leu Asn Glu Asp Thr Arg Val Cys Asp Asp
1635 1640 1645

Val Asn Glu Cys Glu Thr Pro Gly Ile Cys Gly Pro Gly Thr Cys Tyr
1650 1655 1660

Asn Thr Val Gly Asn Tyr Thr Cys Ile Cys Pro Pro Asp Tyr Met Gln
1665 1670 1675 1680

Val Asn Gly Gly Asn Asn Cys Met Asp Met Arg Arg Ser Leu Cys Tyr
1685 1690 1695

Arg Asn Tyr Tyr Ala Asp Asn Gln Thr Cys Asp Gly Glu Leu Leu Phe
1700 1705 1710

Asn Met Thr Lys Lys Met Cys Cys Cys Ser Tyr Asn Ile Gly Arg Ala
1715 1720 1725

Trp Asn Lys Pro Cys Glu Gln Cys Pro Ile Pro Ser Thr Asp Glu Phe
1730 1735 1740

Ala Thr Leu Cys Gly Ser Gln Arg Pro Gly Phe Val Ile Asp Ile Tyr
1745 1750 1755 1760

Thr Gly Leu Pro Val Asp Ile Asp Glu Cys Arg Glu Ile Pro Gly Val
1765 1770 1775

Cys Glu Asn Gly Val Cys Ile Asn Met Val Gly Ser Phe Arg Cys Glu
1780 1785 1790

Cys Pro Val Gly Phe Phe Tyr Asn Asp Lys Leu Leu Val Cys Glu Asp
1795 1800 1805

Ile Asp Glu Cys Gln Asn Gly Pro Val Cys Gln Arg Asn Ala Glu Cys

```
   1810                1815                1820

Ile Asn Thr Ala Gly Ser Tyr Arg Cys Asp Cys Lys Pro Gly Tyr Arg
1825              1830                1835                1840

Phe Thr Ser Thr Gly Gln Cys Asn Asp Arg Asn Glu Cys Gln Glu Ile
               1845                1850                1855

Pro Asn Ile Cys Ser His Gly Gln Cys Ile Asp Thr Val Gly Ser Phe
           1860                1865                1870

Tyr Cys Leu Cys His Thr Gly Phe Lys Thr Asn Ala Asp Gln Thr Met
       1875                1880                1885

Cys Leu Asp Ile Asn Glu Cys Glu Arg Asp Ala Cys Gly Asn Gly Thr
   1890                1895                1900

Cys Arg Asn Thr Ile Gly Ser Phe Asn Cys Arg Cys Asn His Gly Phe
1905              1910                1915                1920

Ile Leu Ser His Asn Asn Asp Cys Ile Asp Val Asp Glu Cys Ala Thr
               1925                1930                1935

Gly Asn Gly Asn Leu Cys Arg Asn Gly Gln Cys Ile Asn Thr Val Gly
           1940                1945                1950

Ser Phe Gln Cys Gln Cys Asn Glu Gly Tyr Glu Val Ala Pro Asp Gly
       1955                1960                1965

Arg Thr Cys Val Asp Ile Asn Glu Cys Leu Leu Asp Pro Arg Lys Cys
   1970                1975                1980

Ala Pro Gly Thr Cys Gln Asn Leu Asp Gly Ser Tyr Arg Cys Ile Cys
1985              1990                1995                2000

Pro Pro Gly Tyr Ser Leu Gln Asn Asp Lys Cys Glu Asp Ile Asp Glu
               2005                2010                2015

Cys Val Glu Glu Pro Glu Ile Cys Ala Leu Gly Thr Cys Ser Asn Thr
           2020                2025                2030

Glu Gly Ser Phe Lys Cys Leu Cys Pro Asp Gly Phe Ser Leu Ser Ser
       2035                2040                2045

Thr Gly Arg Arg Cys Gln Asp Leu Arg Met Ser Tyr Cys Tyr Ala Lys
   2050                2055                2060

Phe Glu Gly Gly Lys Cys Ser Ser Pro Lys Ser Arg Asn His Ser Lys
2065              2070                2075                2080

Gln Glu Cys Cys Cys Ala Leu Lys Gly Glu Gly Trp Gly Asp Pro Cys
               2085                2090                2095

Glu Leu Cys Pro Thr Glu Pro Asp Glu Ala Phe Arg Gln Ile Cys Pro
           2100                2105                2110

Tyr Gly Ser Gly Ile Ile Val Gly Pro Asp Asp Ser Ala Val Asp Met
```

2115 2120 2125

Asp Glu Cys Lys Glu Pro Asp Val Cys Lys His Gly Gln Cys Ile Asn
2130 2135 2140

Thr Asp Gly Ser Tyr Arg Cys Glu Cys Pro Phe Gly Tyr Ile Leu Gln
2145 2150 2155 2160

Gly Asn Glu Cys Val Asp Thr Asp Glu Cys Ser Val Gly Asn Pro Cys
2165 2170 2175

Gly Asn Gly Thr Cys Lys Asn Val Ile Gly Gly Phe Glu Cys Thr Cys
2180 2185 2190

Glu Glu Gly Phe Glu Pro Gly Pro Met Met Thr Cys Glu Asp Ile Asn
2195 2200 2205

Glu Cys Ala Gln Asn Pro Leu Leu Cys Ala Phe Arg Cys Val Asn Thr
2210 2215 2220

Tyr Gly Ser Tyr Glu Cys Lys Cys Pro Ala Gly Tyr Val Leu Arg Glu
2225 2230 2235 2240

Asp Arg Arg Met Cys Lys Asp Glu Asp Glu Cys Glu Glu Gly Lys His
2245 2250 2255

Asp Cys Ala Glu Lys Gln Met Glu Cys Lys Asn Leu Ile Gly Thr Tyr
2260 2265 2270

Leu Cys Ile Cys Gly Pro Gly Tyr Gln Arg Arg Pro Asp Gly Glu Gly
2275 2280 2285

Cys Val Asp Glu Asn Glu Cys Gln Thr Lys Pro Gly Ile Cys Glu Asn
2290 2295 2300

Gly Arg Cys Leu Asn Thr Arg Gly Ser Tyr Thr Cys Glu Cys Asn Asp
2305 2310 2315 2320

Gly Phe Thr Ala Ser Pro Asn Gln Asp Glu Cys Leu Asp Asn Arg Glu
2325 2330 2335

Gly Tyr Cys Phe Thr Glu Val Leu Gln Asn Met Cys Gln Ile Gly Ser
2340 2345 2350

Ser Asn Arg Asn Pro Val Thr Lys Ser Glu Cys Cys Cys Asp Gly Gly
2355 2360 2365

Arg Gly Trp Gly Pro His Cys Glu Ile Cys Pro Phe Gln Gly Thr Val
2370 2375 2380

Ala Phe Lys Lys Leu Cys Pro His Gly Arg Gly Phe Met Thr Asn Gly
2385 2390 2395 2400

Ala Asp Ile Asp Glu Cys Lys Val Ile His Asp Val Cys Arg Asn Gly
2405 2410 2415

Glu Cys Val Asn Asp Arg Gly Ser Tyr His Cys Ile Cys Lys Thr Gly

2420 2425 2430

Tyr Thr Pro Asp Ile Thr Gly Thr Ala Cys Val Asp Leu Asn Glu Cys
2435 2440 2445

Asn Gln Ala Pro Lys Pro Cys Asn Phe Ile Cys Lys Asn Thr Glu Gly
2450 2455 2460

Ser Tyr Gln Cys Ser Cys Pro Lys Gly Tyr Ile Leu Gln Glu Asp Gly
2465 2470 2475 2480

Arg Ser Cys Lys Asp Leu Asp Glu Cys Ala Thr Lys Gln His Asn Cys
2485 2490 2495

Gln Phe Leu Cys Val Asn Thr Ile Gly Ser Phe Thr Cys Lys Cys Pro
2500 2505 2510

Pro Gly Phe Thr Gln His His Thr Ala Cys Ile Asp Asn Asn Glu Cys
2515 2520 2525

Thr Ser Asp Ile Asn Leu Cys Gly Ser Lys Gly Ile Cys Gln Asn Thr
2530 2535 2540

Pro Gly Ser Phe Thr Cys Glu Cys Gln Arg Gly Phe Ser Leu Asp Pro
2545 2550 2555 2560

Thr Gly Ala Ser Cys Glu Asp Val Asp Glu Cys Glu Gly Asn His Arg
2565 2570 2575

Cys Gln His Gly Cys Gln Asn Ile Ile Gly Gly Tyr Arg Cys Ser Cys
2580 2585 2590

Pro Gln Gly Tyr Leu Gln His Tyr Gln Trp Asn Gln Cys Val Asp Glu
2595 2600 2605

Asn Glu Cys Leu Ser Ala His Ile Cys Gly Gly Ala Ser Cys His Asn
2610 2615 2620

Thr Leu Gly Ser Tyr Lys Cys Met Cys Pro Ala Gly Phe Gln Tyr Glu
2625 2630 2635 2640

Gln Phe Ser Gly Gly Cys Gln Asp Ile Asn Glu Cys Gly Ser Ala Gln
2645 2650 2655

Ala Pro Cys Ser Tyr Gly Cys Ser Asn Thr Glu Gly Gly Tyr Leu Cys
2660 2665 2670

Ala Cys Pro Pro Gly Tyr Phe Arg Ile Gly Gln Gly His Cys Val Ser
2675 2680 2685

Gly Met Gly Met Gly Arg Gly Asn Pro Glu Pro Pro Ala Ser Gly Glu
2690 2695 2700

Met Asp Asp Asn Ser Leu Ser Pro Glu Ala Cys Tyr Glu Cys Lys Ile
2705 2710 2715 2720

Asn Gly Tyr Pro Lys Arg Gly Arg Lys Arg Arg Ser Ala Asn Glu Thr

2725 2730 2735

Asp Ala Ser Asn Ile Glu Asp Gln Pro Glu Ile Glu Ala Asn Val Ser
2740 2745 2750

Leu Ala Ser Trp Asp Val Glu Lys Thr Ala Val Phe Ala Phe Asn Ile
2755 2760 2765

Ser His Ile Ser Asn Lys Val Arg Ile Leu Glu Leu Leu Pro Ala Leu
2770 2775 2780

Thr Thr Leu Thr Asn His Asn Arg Tyr Leu Ile Glu Ser Gly Asn Glu
2785 2790 2795 2800

Asn Gly Phe Phe Lys Ile Asn Gln Lys Glu Gly Ile Ser Tyr Leu His
2805 2810 2815

Phe Thr Lys Lys Lys Pro Val Ala Gly Thr Tyr Ser Leu Gln Ile Ser
2820 2825 2830

Ser Thr Pro Leu Tyr Lys Lys Lys Glu Leu Asn Gln Leu Glu Asp Lys
2835 2840 2845

Tyr Asp Lys Asp Tyr Leu Ser Gly Glu Leu Gly Asp Asn Leu Lys Met
2850 2855 2860

Lys Ile Gln Ile Leu Leu His
2865 2870

<210> 60
<211> 2906
<212> PRT
<213> Rattus norvegicus

<400> 60
Met Gly Arg Arg Arg Arg Leu Cys Leu Arg Pro Tyr Phe Val Trp Leu
1 5 10 15

Gly Cys Val Ala Leu Trp Ala Gln Gly Thr Asp Gly Gln Pro Gln Pro
20 25 30

Pro Pro Pro Lys Thr Leu Arg Pro Gln Pro Pro Pro Gln Gln Val Arg
35 40 45

Pro Ala Gly Ala Ser Glu Gly Gly Phe Ala Gly Pro Glu Tyr Arg Asp
50 55 60

Glu Gly Ala Leu Ala Ala Ser Arg Val Arg Arg Arg Gly Gln Gln Glu
65 70 75 80

Ile Leu Arg Gly Pro Asn Val Cys Gly Ser Arg Phe His Ser Tyr Cys
85 90 95

Cys Pro Gly Trp Lys Thr Leu Pro Gly Gly Asn Gln Cys Ile Val Pro
100 105 110

```
Ile Cys Arg Asn Ser Cys Gly Asp Gly Phe Cys Ser Arg Pro Asn Met
        115                 120                 125

Cys Thr Cys Ser Ser Gly Gln Ile Ser Pro Thr Cys Gly Gly Lys Ser
    130                 135                 140

Ile Gln Gln Cys Ser Val Arg Cys Met Asn Gly Gly Thr Cys Ala Asp
145                 150                 155                 160

Asp His Cys Gln Cys Gln Lys Gly Tyr Ile Gly Thr Tyr Cys Gly Gln
                165                 170                 175

Pro Val Cys Glu Thr Gly Cys Gln Asn Gly Gly Arg Cys Ile Gly Pro
            180                 185                 190

Asn Arg Cys Ala Cys Val Tyr Gly Phe Thr Gly Pro Gln Cys Glu Arg
        195                 200                 205

Asp Tyr Arg Thr Gly Pro Cys Phe Thr Gln Val Asn Asn Gln Met Cys
    210                 215                 220

Gln Gly Gln Leu Thr Gly Ile Val Cys Thr Lys Thr Leu Cys Cys Ala
225                 230                 235                 240

Thr Ile Gly Arg Ala Trp Gly His Pro Cys Glu Met Cys Pro Ala Gln
                245                 250                 255

Pro Gln Pro Cys Arg Arg Gly Phe Ile Pro Asn Ile Arg Thr Gly Ala
            260                 265                 270

Cys Gln Asp Val Asp Glu Cys Gln Ala Ile Pro Gly Leu Cys Gln Gly
        275                 280                 285

Gly Asn Cys Ile Asn Thr Val Gly Ser Phe Glu Cys Arg Cys Pro Ala
    290                 295                 300

Gly His Lys Gln Ser Glu Thr Thr Gln Lys Cys Glu Asp Ile Asp Glu
305                 310                 315                 320

Cys Ser Val Val Pro Gly Ile Cys Glu Thr Gly Asp Cys Ser Asn Thr
                325                 330                 335

Val Gly Ser Tyr Phe Cys Leu Cys Pro Arg Gly Phe Val Thr Ser Thr
            340                 345                 350

Asp Gly Ser Arg Cys Ile Asp Gln Arg Thr Gly Thr Cys Phe Ser Gly
        355                 360                 365

Leu Val Asn Gly Arg Cys Ala Gln Glu Leu Pro Gly Arg Met Ala Lys
    370                 375                 380

Ala Gln Cys Cys Cys Glu Pro Gly Arg Cys Trp Gly Ile Gly Thr Ile
385                 390                 395                 400

Pro Glu Ala Cys Pro Val Arg Gly Ser Glu Glu Tyr Arg Arg Leu Cys
                405                 410                 415
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Leu Asp Gly Leu Pro Met Gly Gly Ile Pro Gly Ser Ser Val Ser Arg
            420                 425                 430

Pro Gly Gly Ser Gly Ser Asn Ser Asn Gly Tyr Gly Pro Gly Gly Thr
        435                 440                 445

Gly Phe Leu Pro Ile Pro Gly Gly Asn Gly Phe Ser Pro Gly Val Gly
    450                 455                 460

Gly Ala Gly Val Gly Ala Gly Gly Gln Gly Pro Ile Ile Thr Gly Leu
465                 470                 475                 480

Thr Ile Leu Asn Gln Thr Ile Asp Ile Cys Lys His His Ala Asn Leu
                485                 490                 495

Cys Leu Asn Gly Arg Cys Ile Pro Thr Val Ser Ser Tyr Arg Cys Glu
            500                 505                 510

Cys Asn Met Gly Tyr Lys Gln Asp Ala Asn Gly Asp Cys Ile Asp Val
        515                 520                 525

Asp Glu Cys Thr Ser Asn Pro Cys Ser His Gly Asp Cys Val Asn Thr
    530                 535                 540

Pro Gly Ser Tyr Tyr Cys Lys Cys His Ala Gly Phe Gln Arg Thr Pro
545                 550                 555                 560

Thr Lys Gln Ala Cys Ile Asp Ile Asp Glu Cys Ile Gln Asn Gly Val
                565                 570                 575

Leu Cys Lys Asn Gly Arg Cys Val Asn Thr Asp Gly Ser Phe Gln Cys
            580                 585                 590

Ile Cys Asn Ala Gly Phe Glu Leu Thr Thr Asp Gly Glu Asn Cys Val
        595                 600                 605

Gly His Asp Glu Cys Thr Thr Thr Asn Met Cys Leu Asn Gly Met Cys
    610                 615                 620

Ile Asn Glu Asp Gly Ser Phe Lys Cys Val Cys Lys Pro Gly Phe Val
625                 630                 635                 640

Leu Ala Pro Asn Gly Arg Cys Cys Thr Asp Val Asp Glu Cys Gln Thr
                645                 650                 655

Pro Gly Ile Cys Met Asn Gly His Cys Ile Asn Asn Glu Gly Ser Phe
            660                 665                 670

Arg Cys Asp Cys Pro Pro Gly Leu Ala Val Gly Val Asp Gly Arg Val
        675                 680                 685

Cys Val Asp Thr His Met Arg Ser Thr Cys Tyr Gly Glu Ile Lys Lys
    690                 695                 700

Gly Val Cys Val Arg Pro Phe Pro Gly Ala Val Thr Lys Tyr Glu Cys
705                 710                 715                 720
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Cys Cys Ala Asn Pro Asp Tyr Gly Phe Gly Glu Pro Cys Gln Pro Cys
                725                 730                 735

Pro Ala Lys Asn Ser Ala Glu Phe His Gly Leu Cys Ser Gly Gly Val
            740                 745                 750

Gly Ile Thr Val Asp Gly Arg Asp Ile Asn Glu Cys Ala Leu Asp Pro
        755                 760                 765

Asp Ile Cys Ala Asn Gly Ile Cys Glu Asn Leu Arg Gly Ser Tyr Arg
    770                 775                 780

Cys Asn Cys Asn Ser Gly Tyr Glu Pro Asp Ala Ser Gly Arg Asn Cys
785                 790                 795                 800

Ile Asp Ile Asp Glu Cys Leu Val Asn Arg Leu Leu Cys Asp Asn Gly
                805                 810                 815

Leu Cys Arg Asn Thr Pro Gly Ser Tyr Ser Cys Thr Cys Pro Pro Gly
            820                 825                 830

Tyr Val Phe Arg Thr Glu Thr Glu Thr Cys Glu Asp Val Asn Glu Cys
        835                 840                 845

Glu Ser Asn Pro Cys Val Asn Gly Ala Cys Arg Asn Asn Leu Gly Ser
    850                 855                 860

Phe His Cys Glu Cys Ser Pro Gly Ser Lys Leu Ser Ser Thr Gly Leu
865                 870                 875                 880

Ile Cys Ile Gly Ser Leu Lys Gly Thr Cys Trp Leu Asn Ile Gln Asp
                885                 890                 895

Asn Arg Cys Glu Val Asn Ile Asn Gly Ala Thr Leu Lys Ser Glu Cys
            900                 905                 910

Cys Ala Thr Leu Gly Thr Ala Trp Gly Ser Pro Cys Glu Arg Cys Glu
        915                 920                 925

Leu Asp Ala Ala Cys Pro Arg Gly Phe Ala Arg Ile Lys Gly Val Thr
    930                 935                 940

Cys Glu Asp Val Asn Glu Cys Glu Val Phe Pro Gly Val Cys Pro Asn
945                 950                 955                 960

Gly Arg Cys Val Asn Asn Lys Gly Ser Phe His Cys Glu Cys Pro Glu
                965                 970                 975

Gly Leu Thr Leu Asp Gly Thr Gly Arg Val Cys Leu Asp Val Arg Met
            980                 985                 990

Glu His Cys Phe Leu Lys Trp Asp Glu Asp Glu Cys Val His Pro Val
        995                1000                1005

Pro Gly Lys Phe Arg Met Asp Ala Cys Cys Cys Ala Val Gly Ala Ala
   1010                1015                1020
```

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Trp Gly Thr Glu Cys Glu Glu Cys Pro Lys Pro Gly Thr Lys Glu Tyr
1025               1030                1035                1040

Glu Thr Leu Cys Pro Arg Gly Pro Gly Phe Ala Asn Arg Gly Asp Ile
               1045                1050                1055

Leu Thr Gly Arg Pro Phe Tyr Lys Asp Ile Asn Glu Cys Lys Ala Leu
           1060                1065                1070

Pro Gly Met Cys Thr Tyr Gly Lys Cys Arg Asn Thr Ile Gly Ser Phe
       1075                1080                1085

Lys Cys Arg Cys Asn Ser Gly Phe Ala Leu Asp Met Glu Glu Arg Asn
   1090                1095                1100

Cys Thr Asp Ile Asp Glu Cys Arg Ile Ser Pro Asp Leu Cys Gly Asn
1105               1110                1115                1120

Gly Ile Cys Val Asn Thr Pro Gly Ser Phe Glu Cys Glu Cys Phe Glu
               1125                1130                1135

Gly Tyr Glu Ser Gly Phe Met Met Met Lys Asn Cys Met Asp Ile Asp
           1140                1145                1150

Glu Cys Glu Arg Asn Pro Leu Leu Cys Arg Gly Gly Thr Cys Val Asn
       1155                1160                1165

Thr Glu Gly Ser Phe Gln Cys Asp Cys Pro Leu Gly His Glu Leu Ser
   1170                1175                1180

Pro Ser Arg Glu Asp Cys Ile Asp Ile Asn Glu Cys Ser Leu Ser Asp
1185               1190                1195                1200

Asn Leu Cys Arg Asn Gly Lys Cys Val Asn Met Ile Gly Thr Tyr Gln
               1205                1210                1215

Cys Ser Cys Asn Pro Gly Tyr Gln Ala Thr Pro Asp Arg Gln Gly Cys
           1220                1225                1230

Ser Asp Ile Asp Glu Cys Met Ile Met Asn Gly Gly Cys Asp Thr Gln
       1235                1240                1245

Cys Thr Asn Ser Glu Gly Ser Tyr Glu Cys Ser Cys Ser Glu Gly Tyr
   1250                1255                1260

Ala Leu Met Pro Asp Gly Arg Ser Cys Ala Asp Ile Asp Glu Cys Glu
1265               1270                1275                1280

Asn Asn Pro Asp Ile Cys Asp Gly Gly Gln Cys Thr Asn Ile Pro Gly
               1285                1290                1295

Glu Tyr Arg Cys Leu Cys Tyr Asp Gly Phe Met Ala Ser Met Asp Met
           1300                1305                1310

Lys Thr Cys Ile Asp Val Asn Glu Cys Asp Leu Asn Pro Asn Ile Cys
       1315                1320                1325
```

```
Met Phe Gly Glu Cys Glu Asn Thr Lys Gly Ser Phe Ile Cys His Cys
   1330                1335                1340

Gln Leu Gly Tyr Ser Val Lys Lys Gly Ala Thr Gly Cys Thr Asp Val
1345                1350                1355                1360

Asp Glu Cys Glu Ile Gly Ala His Asn Cys Asp Met His Ala Ser Cys
                1365                1370                1375

Leu Asn Val Pro Gly Ser Phe Lys Cys Ser Cys Arg Glu Gly Trp Val
           1380                1385                1390

Gly Asn Gly Ile Lys Cys Ile Asp Leu Asp Glu Cys Ala Asn Gly Thr
       1395                1400                1405

His Gln Cys Ser Ile Asn Ala Gln Cys Val Asn Thr Pro Gly Ser Tyr
   1410                1415                1420

Arg Cys Ala Cys Ser Glu Gly Phe Thr Gly Asp Gly Phe Thr Cys Ser
1425                1430                1435                1440

Asp Val Asp Glu Cys Ala Glu Asn Ile Asn Leu Cys Glu Asn Gly Gln
                1445                1450                1455

Cys Leu Asn Val Pro Gly Ala Tyr Arg Cys Glu Cys Glu Met Gly Phe
           1460                1465                1470

Thr Pro Ala Ser Asp Ser Arg Ser Cys Gln Asp Ile Asp Glu Cys Ser
       1475                1480                1485

Phe Gln Asn Ile Cys Val Phe Gly Thr Cys Asn Asn Leu Pro Gly Met
   1490                1495                1500

Phe His Cys Ile Cys Asp Asp Gly Tyr Gly Leu Asp Arg Thr Gly Gly
1505                1510                1515                1520

His Cys Thr Asp Ile Asp Glu Cys Ala Asp Pro Ile Asn Cys Val Asn
                1525                1530                1535

Gly Leu Cys Val Asn Thr Pro Gly Arg Tyr Glu Cys Asn Cys Pro Pro
           1540                1545                1550

Asp Phe Gln Leu Asn Ala Thr Gly Val Gly Cys Val Asp Asn Arg Val
       1555                1560                1565

Gly Asn Cys Tyr Leu Lys Phe Gly Pro Arg Gly Asp Gly Ser Leu Ser
   1570                1575                1580

Cys Lys Thr Glu Val Gly Val Gly Val Ser Cys Ser Ser Cys Cys Cys
1585                1590                1595                1600

Ser Leu Gly Lys Ala Trp Gly Asn Pro Cys Glu Thr Cys Pro Pro Val
                1605                1610                1615

Asn Ser Thr Glu Tyr Tyr Ser Leu Cys Pro Gly Gly Glu Gly Phe Arg
           1620                1625                1630
```

Pro Asn Gln Ile Thr Ile Ile Leu Glu Asp Ile Asp Glu Cys Gln Glu
1635 1640 1645

Leu Pro Gly Leu Cys Gln Gly Gly Asn Cys Ile Asn Thr Phe Gly Ser
1650 1655 1660

Phe Gln Cys Glu Cys Pro Gln Gly Tyr Tyr Leu Ser Glu Glu Thr Arg
1665 1670 1675 1680

Ile Cys Glu Asp Ile Asp Glu Cys Phe Ala His Pro Gly Val Cys Gly
1685 1690 1695

Pro Gly Thr Cys Tyr Asn Thr Leu Gly Asn Tyr Thr Cys Ile Cys Pro
1700 1705 1710

Pro Glu Tyr Met Gln Val Asn Gly Gly His Asn Cys Met Asp Met Arg
1715 1720 1725

Lys Ser Phe Cys Tyr Arg Ser Tyr Asn Gly Thr Thr Cys Glu Asn Glu
1730 1735 1740

Leu Pro Phe Asn Val Thr Lys Arg Met Cys Cys Cys Thr Tyr Asn Val
1745 1750 1755 1760

Gly Lys Ala Trp Asn Lys Pro Cys Glu Pro Cys Pro Thr Pro Gly Thr
1765 1770 1775

Ala Asp Phe Lys Thr Ile Cys Gly Asn Ile Pro Gly Phe Thr Phe Asp
1780 1785 1790

Ile His Thr Gly Lys Ala Val Asp Ile Asp Glu Cys Lys Glu Ile Pro
1795 1800 1805

Gly Ile Cys Ala Asn Gly Val Cys Ile Asn Gln Ile Gly Ser Phe Arg
1810 1815 1820

Cys Glu Cys Pro Thr Gly Phe Ser Tyr Asn Asp Leu Leu Leu Val Cys
1825 1830 1835 1840

Glu Asp Ile Asp Glu Cys Ser Asn Gly Asp Asn Leu Cys Gln Arg Asn
1845 1850 1855

Ala Asp Cys Ile Asn Ser Pro Gly Ser Tyr Arg Cys Glu Cys Ala Ala
1860 1865 1870

Gly Phe Lys Leu Ser Pro Asn Gly Ala Cys Val Asp Arg Asn Glu Cys
1875 1880 1885

Leu Glu Ile Pro Asn Val Cys Ser His Gly Leu Cys Val Asp Leu Gln
1890 1895 1900

Gly Ser Tyr Gln Cys Ile Cys Asn Asn Gly Phe Lys Ala Ser Gln Asp
1905 1910 1915 1920

Gln Thr Met Cys Met Asp Val Asp Glu Cys Glu Arg His Pro Cys Gly
1925 1930 1935

Asn Gly Thr Cys Lys Asn Thr Val Gly Ser Tyr Asn Cys Leu Cys Tyr
1940 1945 1950

Pro Gly Phe Glu Leu Thr His Asn Asn Asp Cys Leu Asp Ile Asp Glu
1955 1960 1965

Cys Ser Ser Phe Phe Gly Gln Val Cys Arg Asn Gly Arg Cys Phe Asn
1970 1975 1980

Glu Ile Gly Ser Phe Lys Cys Leu Cys Asn Glu Gly Tyr Glu Leu Thr
1985 1990 1995 2000

Pro Asp Gly Lys Asn Cys Ile Asp Thr Asn Glu Cys Val Ala Leu Pro
2005 2010 2015

Gly Ser Cys Ser Pro Gly Thr Cys Gln Asn Leu Glu Gly Ser Phe Arg
2020 2025 2030

Cys Ile Cys Pro Pro Gly Tyr Glu Val Lys Ser Glu Asn Cys Ile Asp
2035 2040 2045

Ile Asn Glu Cys Asp Glu Asp Pro Asn Ile Cys Leu Phe Ser Ser Cys
2050 2055 2060

Thr Asn Thr Pro Gly Gly Phe Gln Cys Ile Cys Pro Pro Gly Phe Val
2065 2070 2075 2080

Leu Ser Asp Asn Gly Arg Arg Cys Phe Asp Thr Arg Gln Ser Phe Cys
2085 2090 2095

Phe Thr Asn Phe Glu Asn Gly Lys Cys Ser Val Pro Lys Ala Phe Asn
2100 2105 2110

Thr Thr Lys Ala Lys Cys Cys Cys Ser Lys Met Pro Gly Glu Gly Trp
2115 2120 2125

Gly Asp Pro Cys Glu Leu Cys Pro Lys Asp Asp Glu Val Ala Phe Gln
2130 2135 2140

Asp Leu Cys Pro Tyr Gly His Gly Thr Val Pro Ser Leu His Asp Thr
2145 2150 2155 2160

Arg Glu Asp Val Asn Glu Cys Leu Glu Ser Pro Gly Ile Cys Ser Asn
2165 2170 2175

Gly Gln Cys Ile Asn Thr Asp Gly Ser Phe Arg Cys Glu Cys Pro Met
2180 2185 2190

Gly Tyr Asn Leu Asp Tyr Ser Gly Val Arg Cys Val Asp Thr Asp Glu
2195 2200 2205

Cys Ser Ile Gly Asn Pro Cys Gly Asn Gly Thr Cys Ala Asn Val Ile
2210 2215 2220

Gly Ser Phe Glu Cys Asn Cys Asn Glu Gly Phe Glu Pro Gly Pro Met
2225 2230 2235 2240

Met Asn Cys Glu Asp Ile Asn Glu Cys Ala Gln Asn Pro Leu Phe Cys
2245 2250 2255

Ala Phe Arg Cys Met Asn Thr Phe Gly Ser Tyr Glu Cys Thr Cys Pro
2260 2265 2270

Val Gly Tyr Ala Leu Arg Glu Asp Gln Lys Met Cys Lys Asp Leu Asp
2275 2280 2285

Glu Cys Ala Glu Gly Leu His Asp Cys Glu Ser Arg Gly Met Met Cys
2290 2295 2300

Lys Asn Leu Ile Gly Thr Phe Met Cys Ile Cys Pro Pro Gly Met Ala
2305 2310 2315 2320

Arg Arg Pro Asp Gly Glu Gly Cys Val Asp Glu Asn Glu Cys Arg Thr
2325 2330 2335

Lys Pro Gly Ile Cys Glu Asn Gly Arg Cys Val Asn Ile Ile Gly Ser
2340 2345 2350

Tyr Arg Cys Glu Cys Asn Glu Gly Phe Gln Ser Ser Ser Ser Gly Thr
2355 2360 2365

Glu Cys Leu Asp Asn Arg Gln Gly Leu Cys Phe Ala Glu Val Leu Gln
2370 2375 2380

Thr Met Cys Gln Met Ala Ser Ser Ser Arg Asn Leu Val Thr Lys Ser
2385 2390 2395 2400

Glu Cys Cys Cys Asp Gly Gly Arg Gly Trp Gly His Gln Cys Glu Leu
2405 2410 2415

Cys Pro Leu Pro Gly Thr Ala Gln Tyr Lys Lys Ile Cys Pro His Gly
2420 2425 2430

Pro Gly Tyr Ala Thr Asp Gly Arg Asp Ile Asp Glu Cys Lys Val Met
2435 2440 2445

Pro Ser Leu Cys Thr Asn Gly Leu Cys Val Asn Thr Met Gly Ser Phe
2450 2455 2460

Arg Cys Phe Cys Lys Val Gly Tyr Thr Thr Asp Ile Ser Gly Thr Ala
2465 2470 2475 2480

Cys Val Asp Leu Asp Glu Cys Ser Gln Ser Pro Lys Pro Cys Asn Phe
2485 2490 2495

Ile Cys Lys Asn Thr Glu Gly Ser Tyr Gln Cys Ser Cys Pro Arg Gly
2500 2505 2510

Tyr Val Leu Gln Glu Asp Gly Lys Thr Cys Lys Asp Leu Asp Glu Cys
2515 2520 2525

Gln Thr Lys Gln His Asn Cys Gln Phe Leu Cys Val Asn Thr Leu Gly
2530 2535 2540

Gly Phe Thr Cys Lys Cys Pro Pro Gly Phe Thr Gln His His Thr Ala
2545 2550 2555 2560

Cys Ile Asp Asn Asn Glu Cys Gly Ser Gln Pro Ser Leu Cys Gly Ala
2565 2570 2575

Lys Gly Ile Cys Gln Asn Thr Pro Gly Ser Phe Ser Cys Glu Cys Gln
2580 2585 2590

Arg Gly Phe Ser Leu Asp Ala Ser Gly Leu Asn Cys Glu Asp Val Asp
2595 2600 2605

Glu Cys Asp Gly Asn His Arg Cys Gln His Gly Cys Gln Asn Ile Leu
2610 2615 2620

Gly Gly Tyr Arg Cys Gly Cys Pro Gln Gly Tyr Val Gln His Tyr Gln
2625 2630 2635 2640

Trp Asn Gln Cys Val Asp Glu Asn Glu Cys Ser Asn Pro Gly Ala Cys
2645 2650 2655

Gly Ser Ala Ser Cys Tyr Asn Thr Leu Gly Ser Tyr Lys Cys Ala Cys
2660 2665 2670

Pro Ser Arg Phe Ser Phe Asp Gln Phe Ser Ser Ala Cys His Asp Val
2675 2680 2685

Asn Glu Cys Ser Ser Ser Lys Asn Pro Cys Ser Tyr Gly Cys Ser Asn
2690 2695 2700

Thr Glu Gly Gly Tyr Leu Cys Gly Cys Pro Pro Gly Tyr Phe Arg Val
2705 2710 2715 2720

Gly Gln Gly His Cys Val Ser Gly Met Gly Phe Asn Lys Gly Gln Tyr
2725 2730 2735

Leu Ser Val Asp Ser Glu Ala Glu Asp Asp Glu Asn Ala Leu Ser Pro
2740 2745 2750

Glu Ala Cys Tyr Glu Cys Lys Ile Asn Gly Tyr Ala Lys Lys Asp Gly
2755 2760 2765

Arg Arg Lys Arg Ser Ala Ser Glu Pro Glu Pro Ala Ser Ala Glu Glu
2770 2775 2780

Gln Ile Ser Leu Glu Ser Val Ala Met Asp Ser Pro Val Asn Met Lys
2785 2790 2795 2800

Phe Asn Leu Ser Gly Leu Gly Ser Lys Glu His Ile Leu Glu Leu Val
2805 2810 2815

Pro Ala Ile Glu Pro Leu Asn Asn His Ile Arg Tyr Val Ile Ser Gln
2820 2825 2830

Gly Asn Asp Asp Gly Val Phe Arg Ile His Gln Arg Asn Gly Leu Ser
2835 2840 2845

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Tyr Leu His Thr Ala Lys Lys Lys Leu Thr Pro Gly Thr Tyr Thr Leu
   2850                2855                2860

Glu Ile Thr Ser Ile Pro Leu Tyr Gly Lys Lys Glu Leu Arg Lys Leu
2865               2870                2875                2880

Glu Glu Arg Asn Glu Gly Ser Tyr Leu Leu Gly Val Leu Gly Glu Ala
               2885                2890                2895

Leu Arg Met Arg Leu Gln Ile Gln Leu Tyr
           2900                2905


<210> 61
<211> 42
<212> PRT
<213> Homo sapiens

<400> 61
Gly Arg Cys Ser Asn Pro Leu Pro Gly Arg Val Thr Lys Ser Glu Cys
  1               5                  10                  15

Cys Cys Ser Leu Gly Arg Ala Trp Gly Thr Pro Cys Glu Pro Cys Pro
             20                  25                  30

Val Pro Gly Thr Ala Glu Tyr Lys Thr Leu
         35                  40


<210> 62
<211> 42
<212> PRT
<213> Homo sapiens

<400> 62
Gly Arg Cys Ser Asn Pro Leu Pro Gly Arg Val Thr Lys Ser Glu Cys
  1               5                  10                  15

Cys Cys Ser Leu Gly Arg Ala Trp Gly Thr Pro Cys Glu Pro Cys Pro
             20                  25                  30

Val Pro Gly Thr Ala Glu Tyr Lys Thr Leu
         35                  40


<210> 63
<211> 42
<212> PRT
<213> Homo sapiens

<400> 63
Gly Arg Cys Ser Asn Pro Leu Pro Gly Arg Val Thr Lys Ser Glu Cys
  1               5                  10                  15

Cys Cys Ser Leu Gly Arg Ala Trp Gly Thr Pro Cys Glu Pro Cys Pro
             20                  25                  30
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Val Pro Gly Thr Ala Glu Tyr Lys Thr Leu
35 40

<210> 64
<211> 42
<212> PRT
<213> Homo sapiens

<400> 64
Gly Arg Cys Ser Asn Pro Leu Pro Gly Arg Val Thr Lys Ser Glu Cys
1 5 10 15

Cys Cys Ser Leu Gly Arg Ala Trp Gly Thr Pro Cys Glu Pro Cys Pro
20 25 30

Val Pro Gly Thr Ala Glu Tyr Lys Thr Leu
35 40

<210> 65
<211> 42
<212> PRT
<213> Homo sapiens

<400> 65
Gly Arg Cys Ser Asn Pro Leu Pro Gly Arg Val Thr Lys Ser Glu Cys
1 5 10 15

Cys Cys Ser Leu Gly Arg Ala Trp Gly Thr Pro Cys Glu Pro Cys Pro
20 25 30

Val Pro Gly Thr Ala Glu Tyr Lys Thr Leu
35 40

<210> 66
<211> 42
<212> PRT
<213> Homo sapiens

<400> 66
Gly Arg Cys Ser Asn Pro Leu Pro Gly Arg Val Thr Lys Ser Glu Cys
1 5 10 15

Cys Cys Ser Leu Gly Arg Ala Trp Gly Thr Pro Cys Glu Pro Cys Pro
20 25 30

Val Pro Gly Thr Ala Glu Tyr Lys Thr Leu
35 40

<210> 67
<211> 42
<212> PRT
<213> Homo sapiens

<400> 67
Gly Arg Cys Ser Asn Pro Leu Pro Gly Arg Val Thr Lys Ser Glu Cys
1 5 10 15

Cys Cys Ser Leu Gly Arg Ala Trp Gly Thr Pro Cys Glu Pro Cys Pro
20 25 30

Val Pro Gly Thr Ala Glu Tyr Lys Thr Leu
35 40

<210> 68
<211> 42
<212> PRT
<213> Homo sapiens

<400> 68
Gly Arg Cys Ser Asn Pro Leu Pro Gly Arg Val Thr Lys Ser Glu Cys
1 5 10 15

Cys Cys Ser Leu Gly Arg Ala Trp Gly Thr Pro Cys Glu Pro Cys Pro
20 25 30

Val Pro Gly Thr Ala Glu Tyr Lys Thr Leu
35 40

<210> 69
<211> 777
<212> PRT
<213> Homo sapiens

<400> 69
Met Ser Ala Gln Thr Ser Pro Ala Glu Lys Gly Leu Asn Pro Gly Leu
1 5 10 15

Met Cys Gln Glu Ser Tyr Ala Cys Ser Gly Thr Asp Glu Ala Ile Phe
20 25 30

Glu Cys Asp Glu Cys Cys Ser Leu Gln Cys Leu Arg Cys Glu Glu Glu
35 40 45

Leu His Arg Gln Glu Arg Leu Arg Asn His Glu Arg Ile Arg Leu Lys
50 55 60

Pro Gly His Val Pro Tyr Cys Asp Leu Cys Lys Gly Leu Ser Gly His
65 70 75 80

Leu Pro Gly Val Arg Gln Arg Ala Ile Val Arg Cys Gln Thr Cys Lys
85 90 95

Ile Asn Leu Cys Leu Glu Cys Gln Lys Arg Thr His Ser Gly Gly Asn
100 105 110

Lys Arg Arg His Pro Val Thr Val Tyr Asn Val Ser Asn Leu Gln Glu
115 120 125

Ser Leu Glu Ala Glu Glu Met Asp Glu Glu Thr Lys Arg Lys Lys Met
130 135 140

Thr Glu Lys Val Val Ser Phe Leu Leu Val Asp Glu Asn Glu Glu Ile
145 150 155 160

Gln Val Thr Asn Glu Glu Asp Phe Ile Arg Lys Leu Asp Cys Lys Pro
165 170 175

Asp Gln His Leu Lys Val Val Ser Ile Phe Gly Asn Thr Gly Asp Gly
180 185 190

Lys Ser His Thr Leu Asn His Thr Phe Phe Tyr Gly Arg Glu Val Phe
195 200 205

Lys Thr Ser Pro Thr Gln Glu Ser Cys Thr Val Gly Val Trp Ala Ala
210 215 220

Tyr Asp Pro Val His Lys Val Ala Val Ile Asp Thr Glu Gly Leu Leu
225 230 235 240

Gly Ala Thr Val Asn Leu Ser Gln Arg Thr Arg Leu Leu Leu Lys Val
245 250 255

Leu Ala Ile Ser Asp Leu Val Ile Tyr Arg Thr His Ala Asp Arg Leu
260 265 270

His Asn Asp Leu Phe Lys Phe Leu Gly Asp Ala Ser Glu Ala Tyr Leu
275 280 285

Lys His Phe Thr Lys Glu Leu Lys Ala Thr Thr Ala Arg Cys Gly Leu
290 295 300

Asp Val Pro Leu Ser Thr Leu Gly Pro Ala Val Ile Ile Phe His Glu
305 310 315 320

Thr Val His Thr Gln Leu Leu Gly Ser Asp His Pro Ser Glu Val Pro
325 330 335

Glu Lys Leu Ile Gln Asp Arg Phe Arg Lys Leu Gly Arg Phe Pro Glu
340 345 350

Ala Phe Ser Ser Ile His Tyr Lys Gly Thr Arg Thr Tyr Asn Pro Pro
355 360 365

Thr Asp Phe Ser Gly Leu Arg Arg Ala Leu Glu Gln Leu Leu Glu Asn
370 375 380

Asn Thr Thr Arg Ser Pro Arg His Pro Gly Val Ile Phe Lys Ala Leu
385 390 395 400

Lys Ala Leu Ser Asp Arg Phe Ser Gly Glu Ile Pro Asp Asp Gln Met
405 410 415

Ala His Ser Ser Phe Phe Pro Asp Glu Tyr Phe Thr Cys Ser Ser Leu
420 425 430

```
Cys Leu Ser Cys Gly Val Gly Cys Lys Lys Ser Met Asn His Gly Lys
        435                 440                 445

Glu Gly Val Pro His Glu Ala Lys Ser Arg Cys Arg Tyr Ser His Gln
    450                 455                 460

Tyr Asp Asn Arg Val Tyr Thr Cys Lys Ala Cys Tyr Glu Arg Gly Glu
465                 470                 475                 480

Glu Val Ser Val Val Pro Lys Thr Ser Ala Ser Thr Asp Ser Pro Trp
                485                 490                 495

Met Gly Leu Ala Lys Tyr Ala Trp Ser Gly Tyr Val Ile Glu Cys Pro
            500                 505                 510

Asn Cys Gly Val Val Tyr Arg Ser Arg Gln Tyr Trp Phe Gly Asn Gln
        515                 520                 525

Asp Pro Val Asp Thr Val Val Arg Thr Glu Ile Val His Val Trp Pro
    530                 535                 540

Gly Thr Asp Gly Phe Leu Lys Asp Asn Asn Asn Ala Ala Gln Arg Leu
545                 550                 555                 560

Leu Asp Gly Met Asn Phe Met Ala Gln Ser Val Ser Glu Leu Ser Leu
                565                 570                 575

Gly Pro Thr Lys Ala Val Thr Ser Trp Leu Thr Asp Gln Ile Ala Pro
            580                 585                 590

Ala Tyr Trp Arg Pro Asn Ser Gln Ile Leu Ser Cys Asn Lys Cys Ala
        595                 600                 605

Thr Ser Phe Lys Asp Asn Asp Thr Lys His His Cys Arg Ala Cys Gly
    610                 615                 620

Glu Gly Phe Cys Asp Ser Cys Ser Ser Lys Thr Arg Pro Val Pro Glu
625                 630                 635                 640

Arg Gly Trp Gly Pro Ala Pro Val Arg Val Cys Asp Asn Cys Tyr Glu
                645                 650                 655

Ala Arg Asn Val Gln Leu Ala Val Thr Glu Ala Gln Val Asp Asp Glu
            660                 665                 670

Gly Gly Thr Leu Ile Ala Arg Lys Val Gly Glu Ala Val Gln Asn Thr
        675                 680                 685

Leu Gly Ala Val Val Thr Ala Ile Asp Ile Pro Leu Gly Leu Val Lys
    690                 695                 700

Asp Ala Ala Arg Pro Ala Tyr Trp Val Pro Asp His Glu Ile Leu His
705                 710                 715                 720

Cys His Asn Cys Arg Lys Glu Phe Ser Ile Lys Leu Ser Lys His His
                725                 730                 735
```

Cys Arg Ala Cys Gly Gln Gly Phe Cys Asp Glu Cys Ser His Asp Arg
740 745 750

Arg Ala Val Pro Ser Arg Gly Trp Asp His Pro Val Arg Val Cys Phe
755 760 765

Asn Cys Asn Lys Lys Pro Gly Asp Leu
770 775

<210> 70
<211> 759
<212> PRT
<213> Homo sapiens

<400> 70
Met Ser Ala Gln Thr Ser Pro Ala Glu Lys Gly Leu Asn Pro Gly Leu
1 5 10 15

Met Cys Gln Glu Ser Tyr Ala Cys Ser Gly Thr Asp Glu Ala Ile Phe
20 25 30

Glu Cys Asp Glu Cys Cys Ser Leu Gln Cys Leu Arg Cys Glu Glu Glu
35 40 45

Leu His Arg Gln Glu Arg Leu Arg Asn His Glu Arg Ile Arg Leu Lys
50 55 60

Pro Gly His Val Pro Tyr Cys Asp Leu Cys Lys Gly Leu Ser Gly His
65 70 75 80

Leu Pro Gly Val Arg Gln Arg Ala Ile Val Arg Cys Gln Thr Cys Lys
85 90 95

Ile Asn Leu Cys Leu Glu Cys Gln Lys Arg Thr His Ser Gly Gly Asn
100 105 110

Lys Arg Arg His Pro Val Thr Val Tyr Asn Val Ser Asn Leu Gln Glu
115 120 125

Ser Leu Glu Ala Glu Glu Met Asp Glu Glu Thr Lys Arg Lys Lys Met
130 135 140

Thr Glu Lys Val Val Ser Phe Leu Leu Val Asp Glu Asn Glu Glu Ile
145 150 155 160

Gln Val Thr Asn Glu Glu Asp Phe Ile Arg Lys Leu Asp Cys Lys Pro
165 170 175

Asp Gln His Leu Lys Val Val Ser Ile Phe Gly Asn Thr Gly Asp Gly
180 185 190

Lys Ser His Thr Leu Asn His Thr Phe Phe Tyr Gly Arg Glu Val Phe
195 200 205

Lys Thr Ser Pro Thr Gln Glu Ser Cys Thr Val Gly Val Trp Ala Ala
210 215 220

Tyr Asp Pro Val His Lys Val Ala Val Ile Asp Thr Glu Gly Leu Leu
225 230 235 240

Gly Ala Thr Val Asn Leu Ser Gln Arg Thr Arg Leu Leu Leu Lys Val
245 250 255

Leu Ala Ile Ser Asp Leu Val Ile Tyr Arg Thr His Ala Asp Arg Leu
260 265 270

His Asn Asp Leu Phe Lys Phe Leu Gly Asp Ala Ser Glu Ala Tyr Leu
275 280 285

Lys His Phe Thr Lys Glu Leu Lys Ala Thr Thr Ala Arg Cys Gly Leu
290 295 300

Asp Val Pro Leu Ser Thr Leu Gly Pro Ala Val Ile Ile Phe His Glu
305 310 315 320

Thr Val His Thr Gln Leu Leu Gly Ser Asp His Pro Ser Glu Val Pro
325 330 335

Glu Lys Leu Ile Gln Asp Arg Phe Arg Lys Leu Gly Arg Phe Pro Glu
340 345 350

Ala Phe Ser Ser Ile His Tyr Lys Gly Thr Arg Thr Tyr Asn Pro Pro
355 360 365

Thr Asp Phe Ser Gly Leu Arg Arg Ala Leu Glu Gln Leu Leu Glu Asn
370 375 380

Asn Thr Thr Arg Ser Pro Arg His Pro Gly Val Ile Phe Lys Ala Leu
385 390 395 400

Lys Ala Leu Ser Asp Arg Phe Ser Gly Glu Ile Pro Asp Asp Gln Met
405 410 415

Ala His Ser Ser Phe Phe Pro Asp Glu Tyr Phe Thr Cys Ser Ser Leu
420 425 430

Cys Leu Ser Cys Gly Val Gly Cys Lys Lys Ser Met Asn His Gly Lys
435 440 445

Glu Gly Val Pro His Glu Ala Lys Ser Arg Cys Arg Tyr Ser His Gln
450 455 460

Tyr Asp Asn Arg Val Tyr Thr Cys Lys Ala Cys Tyr Glu Arg Gly Glu
465 470 475 480

Glu Val Ser Val Val Pro Lys Thr Ser Ala Ser Thr Asp Ser Pro Trp
485 490 495

Met Gly Leu Ala Lys Tyr Ala Trp Ser Gly Tyr Val Ile Glu Cys Pro
500 505 510

Asn Cys Gly Val Val Tyr Arg Ser Arg Gln Tyr Trp Phe Gly Asn Gln
515 520 525

```
Asp Pro Val Asp Thr Val Val Arg Thr Glu Ile Val His Val Trp Pro
    530                 535                 540

Gly Thr Asp Gly Phe Leu Lys Asp Asn Asn Asn Ala Ala Gln Arg Leu
545                 550                 555                 560

Leu Asp Gly Met Asn Phe Met Ala Gln Ser Val Ser Glu Leu Ser Leu
                565                 570                 575

Gly Pro Thr Lys Ala Val Thr Ser Trp Leu Thr Asp Gln Ile Ala Pro
            580                 585                 590

Ala Tyr Trp Arg Pro Asn Ser Gln Ile Leu Ser Cys Asn Lys Cys Ala
        595                 600                 605

Thr Ser Phe Lys Asp Asn Asp Thr Lys His His Cys Arg Ala Cys Gly
    610                 615                 620

Glu Gly Phe Cys Asp Ser Cys Ser Ser Lys Thr Arg Pro Val Pro Glu
625                 630                 635                 640

Arg Gly Trp Gly Pro Ala Pro Val Arg Val Cys Asp Asn Cys Tyr Glu
                645                 650                 655

Ala Arg Asn Val Gln Leu Ala Val Thr Glu Ala Gln Val Asp Asp Glu
            660                 665                 670

Gly Gly Thr Leu Ile Ala Arg Lys Val Gly Glu Ala Val Gln Asn Thr
        675                 680                 685

Leu Gly Ala Val Val Thr Ala Ile Asp Ile Pro Leu Gly Leu Val Lys
    690                 695                 700

Asp Ala Ala Arg Pro Ala Tyr Trp Val Pro Asp His Glu Ile Leu His
705                 710                 715                 720

Cys His Asn Cys Arg Lys Glu Phe Ser Ile Lys Leu Ser Lys His His
                725                 730                 735

Cys Arg Ala Cys Gly Gln Gly Phe Cys Asp Glu Cys Ser His Asp Arg
            740                 745                 750

Arg Ala Val Pro Ser Arg Gly
        755


<210> 71
<211> 816
<212> PRT
<213> Homo sapiens

<400> 71
Ser Val Gln Asn Pro Val Glu Val Ser Cys Ser Leu Gln Thr Gln Ile
  1               5                  10                  15

Phe Val Phe Thr Pro Gly Ala Ser Ser Val Thr Ile Ile Trp Trp Val
```

```
            20                  25                  30

Cys Phe Leu Thr Ser Val Ser Met Ser Ala Gln Thr Ser Pro Ala Glu
        35                  40                  45

Lys Gly Leu Asn Pro Gly Leu Met Cys Gln Glu Ser Tyr Ala Cys Ser
    50                  55                  60

Gly Thr Asp Glu Ala Ile Phe Glu Cys Asp Glu Cys Cys Ser Leu Gln
65                  70                  75                  80

Cys Leu Arg Cys Glu Glu Glu Leu His Arg Gln Glu Arg Leu Arg Asn
                85                  90                  95

His Glu Arg Ile Arg Leu Lys Pro Gly His Val Pro Tyr Cys Asp Leu
            100                 105                 110

Cys Lys Gly Leu Ser Gly His Leu Pro Gly Val Arg Gln Arg Ala Ile
        115                 120                 125

Val Arg Cys Gln Thr Cys Lys Ile Asn Leu Cys Leu Glu Cys Gln Lys
    130                 135                 140

Arg Thr His Ser Gly Gly Asn Lys Arg Arg His Pro Val Thr Val Tyr
145                 150                 155                 160

Asn Val Ser Asn Leu Gln Glu Ser Leu Glu Ala Glu Glu Met Asp Glu
                165                 170                 175

Glu Thr Lys Arg Lys Lys Met Thr Glu Lys Val Val Ser Phe Leu Leu
            180                 185                 190

Val Asp Glu Asn Glu Glu Ile Gln Val Thr Asn Glu Glu Asp Phe Ile
        195                 200                 205

Arg Lys Leu Asp Cys Lys Pro Asp Gln His Leu Lys Val Val Ser Ile
    210                 215                 220

Phe Gly Asn Thr Gly Asp Gly Lys Ser His Thr Leu Asn His Thr Phe
225                 230                 235                 240

Phe Tyr Gly Arg Glu Val Phe Lys Thr Ser Pro Thr Gln Glu Ser Cys
                245                 250                 255

Thr Val Gly Val Trp Ala Ala Tyr Asp Pro Val His Lys Val Ala Val
            260                 265                 270

Ile Asp Thr Glu Gly Leu Leu Gly Ala Thr Val Asn Leu Ser Gln Arg
        275                 280                 285

Thr Arg Leu Leu Leu Lys Val Leu Ala Ile Ser Asp Leu Val Ile Tyr
    290                 295                 300

Arg Thr His Ala Asp Arg Leu His Asn Asp Leu Phe Lys Phe Leu Gly
305                 310                 315                 320

Asp Ala Ser Glu Ala Tyr Leu Lys His Phe Thr Lys Glu Leu Lys Ala
```

325 330 335

Thr Thr Ala Arg Cys Gly Leu Asp Val Pro Leu Ser Thr Leu Gly Pro
340 345 350

Ala Val Ile Ile Phe His Glu Thr Val His Thr Gln Leu Leu Gly Ser
355 360 365

Asp His Pro Ser Glu Val Pro Glu Lys Leu Ile Gln Asp Arg Phe Arg
370 375 380

Lys Leu Gly Arg Phe Pro Glu Ala Phe Ser Ser Ile His Tyr Lys Gly
385 390 395 400

Thr Arg Thr Tyr Asn Pro Pro Thr Asp Phe Ser Gly Leu Arg Arg Ala
405 410 415

Leu Glu Gln Leu Leu Glu Asn Asn Thr Thr Arg Ser Pro Arg His Pro
420 425 430

Gly Val Ile Phe Lys Ala Leu Lys Ala Leu Ser Asp Arg Phe Ser Gly
435 440 445

Glu Ile Pro Asp Asp Gln Met Ala His Ser Ser Phe Phe Pro Asp Glu
450 455 460

Tyr Phe Thr Cys Ser Ser Leu Cys Leu Ser Cys Gly Val Gly Cys Lys
465 470 475 480

Lys Ser Met Asn His Gly Lys Glu Gly Val Pro His Glu Ala Lys Ser
485 490 495

Arg Cys Arg Tyr Ser His Gln Tyr Asp Asn Arg Val Tyr Thr Cys Lys
500 505 510

Ala Cys Tyr Glu Arg Gly Glu Glu Val Ser Val Val Pro Lys Thr Ser
515 520 525

Ala Ser Thr Asp Ser Pro Trp Met Gly Leu Ala Lys Tyr Ala Trp Ser
530 535 540

Gly Tyr Val Ile Glu Cys Pro Asn Cys Gly Val Val Tyr Arg Ser Arg
545 550 555 560

Gln Tyr Trp Phe Gly Asn Gln Asp Pro Val Asp Thr Val Val Arg Thr
565 570 575

Glu Ile Val His Val Trp Pro Gly Thr Asp Gly Phe Leu Lys Asp Asn
580 585 590

Asn Asn Ala Ala Gln Arg Leu Leu Asp Gly Met Asn Phe Met Ala Gln
595 600 605

Ser Val Ser Glu Leu Ser Leu Gly Pro Thr Lys Ala Val Thr Ser Trp
610 615 620

Leu Thr Asp Gln Ile Ala Pro Ala Tyr Trp Arg Pro Asn Ser Gln Ile

625 630 635 640

Leu Ser Cys Asn Lys Cys Ala Thr Ser Phe Lys Asp Asn Asp Thr Lys
645 650 655

His His Cys Arg Ala Cys Gly Glu Gly Phe Cys Asp Ser Cys Ser Ser
660 665 670

Lys Thr Arg Pro Val Pro Glu Arg Gly Trp Gly Pro Ala Pro Val Arg
675 680 685

Val Cys Asp Asn Cys Tyr Glu Ala Arg Asn Val Gln Leu Ala Val Thr
690 695 700

Glu Ala Gln Val Asp Asp Glu Gly Gly Thr Leu Ile Ala Arg Lys Val
705 710 715 720

Gly Glu Ala Val Gln Asn Thr Leu Gly Ala Val Val Thr Ala Ile Asp
725 730 735

Ile Pro Leu Gly Leu Val Lys Asp Ala Ala Arg Pro Ala Tyr Trp Val
740 745 750

Pro Asp His Glu Ile Leu His Cys His Asn Cys Arg Lys Glu Phe Ser
755 760 765

Ile Lys Leu Ser Lys His His Cys Arg Ala Cys Gly Gln Gly Phe Cys
770 775 780

Asp Glu Cys Ser His Asp Arg Arg Ala Val Pro Ser Arg Gly Trp Asp
785 790 795 800

His Pro Val Arg Val Cys Phe Asn Cys Asn Lys Lys Pro Gly Asp Leu
805 810 815

<210> 72
<211> 362
<212> PRT
<213> Homo sapiens

<400> 72
Met Ala His Ser Ser Phe Phe Pro Asp Glu Tyr Phe Thr Cys Ser Ser
1 5 10 15

Leu Cys Leu Ser Cys Gly Val Gly Cys Lys Lys Ser Met Asn His Gly
20 25 30

Lys Glu Gly Val Pro His Glu Ala Lys Ser Arg Cys Arg Tyr Ser His
35 40 45

Gln Tyr Asp Asn Arg Val Tyr Thr Cys Lys Ala Cys Tyr Glu Arg Gly
50 55 60

```
Glu Glu Val Ser Val Val Pro Lys Thr Ser Ala Ser Thr Asp Ser Pro
 65                  70                  75                  80

Trp Met Gly Leu Ala Lys Tyr Ala Trp Ser Gly Tyr Val Ile Glu Cys
                 85                  90                  95

Pro Asn Cys Gly Val Val Tyr Arg Ser Arg Gln Tyr Trp Phe Gly Asn
            100                 105                 110

Gln Asp Pro Val Asp Thr Val Val Arg Thr Glu Ile Val His Val Trp
        115                 120                 125

Pro Gly Thr Asp Gly Phe Leu Lys Asp Asn Asn Asn Ala Ala Gln Arg
    130                 135                 140

Leu Leu Asp Gly Met Asn Phe Met Ala Gln Ser Val Ser Glu Leu Ser
145                 150                 155                 160

Leu Gly Pro Thr Lys Ala Val Thr Ser Trp Leu Thr Asp Gln Ile Ala
                165                 170                 175

Pro Ala Tyr Trp Arg Pro Asn Ser Gln Ile Leu Ser Cys Asn Lys Cys
            180                 185                 190

Ala Thr Ser Phe Lys Asp Asn Asp Thr Lys His His Cys Arg Ala Cys
        195                 200                 205

Gly Glu Gly Phe Cys Asp Ser Cys Ser Ser Lys Thr Arg Pro Val Pro
    210                 215                 220

Glu Arg Gly Trp Gly Pro Ala Pro Val Arg Val Cys Asp Asn Cys Tyr
225                 230                 235                 240

Glu Ala Arg Asn Val Gln Leu Ala Val Thr Glu Ala Gln Val Asp Asp
                245                 250                 255

Glu Gly Gly Thr Leu Ile Ala Arg Lys Val Gly Glu Ala Val Gln Asn
            260                 265                 270

Thr Leu Gly Ala Val Val Thr Ala Ile Asp Ile Pro Leu Gly Leu Val
        275                 280                 285

Lys Asp Ala Ala Arg Pro Ala Tyr Trp Val Pro Asp His Glu Ile Leu
    290                 295                 300

His Cys His Asn Cys Arg Lys Glu Phe Ser Ile Lys Leu Ser Lys His
305                 310                 315                 320

His Cys Arg Ala Cys Gly Gln Gly Phe Cys Asp Glu Cys Ser His Asp
                325                 330                 335

Arg Arg Ala Val Pro Ser Arg Gly Trp Asp His Pro Val Arg Val Cys
            340                 345                 350

Phe Asn Cys Asn Lys Lys Pro Gly Asp Leu
        355                 360
```

<210> 73
<211> 600
<212> PRT
<213> Homo sapiens

<400> 73
Met Met Glu Glu Arg Ala Asn Leu Met His Met Met Lys Leu Ser Ile
1 5 10 15

Lys Val Leu Leu Gln Ser Ala Leu Ser Leu Gly Arg Ser Leu Asp Ala
20 25 30

Asp His Ala Pro Leu Gln Gln Phe Phe Val Val Met Glu His Cys Leu
35 40 45

Lys His Gly Leu Lys Val Lys Lys Ser Phe Ile Gly Gln Asn Lys Ser
50 55 60

Phe Phe Gly Pro Leu Glu Leu Val Glu Lys Leu Cys Pro Glu Ala Ser
65 70 75 80

Asp Ile Ala Thr Ser Val Arg Asn Leu Pro Glu Leu Lys Thr Ala Val
85 90 95

Gly Arg Gly Arg Ala Trp Leu Tyr Leu Ala Leu Met Gln Lys Lys Leu
100 105 110

Ala Asp Tyr Leu Lys Val Leu Ile Asp Asn Lys His Leu Leu Ser Glu
115 120 125

Phe Tyr Glu Pro Glu Ala Leu Met Met Glu Glu Glu Gly Met Val Ile
130 135 140

Val Gly Leu Leu Val Gly Leu Asn Val Leu Asp Ala Asn Leu Cys Leu
145 150 155 160

Lys Gly Glu Asp Leu Asp Ser Gln Val Gly Val Ile Asp Phe Ser Leu
165 170 175

Tyr Leu Lys Asp Val Gln Asp Leu Asp Gly Gly Lys Glu His Glu Arg
180 185 190

Ile Thr Asp Val Leu Asp Gln Lys Asn Tyr Val Glu Glu Leu Asn Arg
195 200 205

His Leu Ser Cys Thr Val Gly Asp Leu Gln Thr Lys Ile Asp Gly Leu
210 215 220

Glu Lys Thr Asn Ser Lys Leu Gln Glu Glu Leu Ser Ala Ala Thr Asp
225 230 235 240

Arg Ile Cys Ser Leu Gln Glu Glu Gln Gln Gln Leu Arg Glu Gln Asn
245 250 255

Glu Leu Ile Arg Glu Arg Ser Glu Lys Ser Val Glu Ile Thr Lys Gln
260 265 270

Asp Thr Lys Val Glu Leu Glu Thr Tyr Lys Gln Thr Arg Gln Gly Leu
275 280 285

Asp Glu Met Tyr Ser Asp Val Trp Lys Gln Leu Lys Glu Glu Lys Lys
290 295 300

Val Arg Leu Glu Leu Glu Lys Glu Leu Glu Leu Gln Ile Gly Met Lys
305 310 315 320

Thr Glu Met Glu Ile Ala Met Lys Leu Leu Glu Lys Asp Thr His Glu
325 330 335

Lys Gln Asp Thr Leu Val Ala Leu Arg Gln Gln Leu Glu Glu Val Lys
340 345 350

Ala Ile Asn Leu Gln Met Phe His Lys Ala Gln Asn Ala Glu Ser Ser
355 360 365

Leu Gln Gln Lys Asn Glu Ala Ile Thr Ser Phe Glu Gly Lys Thr Asn
370 375 380

Gln Val Met Ser Ser Met Lys Gln Met Glu Glu Arg Leu Gln His Ser
385 390 395 400

Glu Arg Ala Arg Gln Gly Ala Glu Glu Arg Ser His Lys Leu Gln Gln
405 410 415

Glu Leu Gly Gly Arg Ile Gly Ala Leu Gln Leu Gln Leu Ser Gln Leu
420 425 430

His Glu Gln Cys Ser Ser Leu Glu Lys Glu Leu Lys Ser Glu Lys Glu
435 440 445

Gln Arg Gln Ala Leu Gln Arg Glu Leu Gln His Glu Lys Asp Thr Ser
450 455 460

Ser Leu Leu Arg Met Glu Leu Gln Gln Val Glu Gly Leu Lys Lys Glu
465 470 475 480

Leu Arg Glu Leu Gln Asp Glu Lys Ala Glu Leu Gln Lys Ile Cys Glu
485 490 495

Glu Gln Glu Gln Ala Leu Gln Glu Met Gly Leu His Leu Ser Gln Ser
500 505 510

Lys Leu Lys Met Glu Asp Ile Lys Glu Val Asn Gln Ala Leu Lys Gly
515 520 525

His Ala Trp Leu Lys Asp Asp Glu Ala Thr His Cys Arg Gln Cys Glu
530 535 540

Lys Glu Phe Ser Ile Ser Arg Arg Lys His His Cys Arg Asn Cys Gly
545 550 555 560

His Ile Phe Cys Asn Thr Cys Ser Ser Asn Glu Leu Ala Leu Pro Ser
565 570 575

```
Tyr Pro Lys Pro Val Arg Val Cys Asp Ser Cys His Thr Leu Leu Leu
            580                 585                 590

Gln Arg Cys Ser Ser Thr Ala Ser
        595                 600
```

<210> 74
<211> 69
<212> PRT
<213> Homo sapiens

<400> 74

```
Glu Val Arg Pro His Trp Ile Pro Asp Val Glu Ala Ser Asn Cys Met
  1               5                  10                  15

Gly Cys Gly Lys Glu Phe Asn Leu Thr Lys Arg Arg His His Cys Arg
             20                  25                  30

Asn Cys Gly Arg Ile Phe Cys Ser Lys Cys Ser Ser Lys Lys Ala Pro
         35                  40                  45

Leu Pro Lys Leu Gly Asn Glu Asp Pro Val Arg Val Cys Asp Asp Cys
     50                  55                  60

Tyr Glu Asn Leu Asn
 65
```

<210> 75
<211> 69
<212> PRT
<213> Homo sapiens

<400> 75

```
Glu Val Arg Pro His Trp Ile Pro Asp Val Glu Ala Ser Asn Cys Met
  1               5                  10                  15

Gly Cys Gly Lys Glu Phe Asn Leu Thr Lys Arg Arg His His Cys Arg
             20                  25                  30

Asn Cys Gly Arg Ile Phe Cys Ser Lys Cys Ser Ser Lys Lys Ala Pro
         35                  40                  45

Leu Pro Lys Leu Gly Asn Glu Asp Pro Val Arg Val Cys Asp Asp Cys
     50                  55                  60

Tyr Glu Asn Leu Asn
 65
```

<210> 76
<211> 66
<212> PRT
<213> Homo sapiens

<400> 76
Pro His Trp Val Pro Asp Glu Glu Val Ser Asn Cys Met Arg Cys Gly
1 5 10 15

Lys Pro Phe Thr Leu Thr Lys Arg Arg His His Cys Arg Ala Cys Gly
20 25 30

Arg Ile Phe Cys Ser Ser Cys Ser Ser Lys Thr Val Pro Leu Pro Pro
35 40 45

Met Gly Glu Arg Pro Val Arg Val Cys Asp Ser Cys Tyr Asp Leu Leu
50 55 60

Asn Lys
65

<210> 77
<211> 66
<212> PRT
<213> Homo sapiens

<400> 77
Pro His Trp Val Pro Asp Glu Glu Val Ser Asn Cys Met Arg Cys Gly
1 5 10 15

Lys Pro Phe Thr Leu Thr Lys Arg Arg His His Cys Arg Ala Cys Gly
20 25 30

Arg Ile Phe Cys Ser Ser Cys Ser Ser Lys Thr Val Pro Leu Pro Pro
35 40 45

Met Gly Glu Arg Pro Val Arg Val Cys Asp Ser Cys Tyr Asp Leu Leu
50 55 60

Asn Lys
65

<210> 78
<211> 489
<212> PRT
<213> Homo sapiens

<400> 78
Met Asn Lys Ser Arg Trp Gln Ser Arg Arg Arg His Gly Arg Arg Ser
1 5 10 15

His Gln Gln Asn Pro Trp Phe Arg Leu Arg Asp Ser Glu Asp Arg Ser
20 25 30

Asp Ser Arg Ala Ala Gln Pro Ala His Asp Ser Gly His Gly Asp Asp
35 40 45

Glu Ser Pro Ser Thr Ser Ser Gly Thr Ala Gly Thr Ser Ser Val Pro
50 55 60

```
Gly Leu Pro Gly Phe Tyr Phe Asp Pro Glu Lys Lys Arg Tyr Phe Arg
 65                  70                  75                  80

Leu Leu Pro Gly His Asn Asn Cys Asn Pro Leu Thr Lys Glu Ser Ile
                 85                  90                  95

Arg Gln Lys Glu Met Glu Ser Lys Arg Leu Arg Leu Leu Gln Glu Glu
            100                 105                 110

Asp Arg Arg Lys Lys Ile Ala Arg Met Gly Phe Asn Ala Ser Ser Met
        115                 120                 125

Leu Arg Lys Ser Gln Leu Gly Phe Leu Asn Val Thr Asn Tyr Cys His
    130                 135                 140

Leu Ala His Glu Leu Arg Leu Ser Cys Met Glu Arg Lys Lys Val Gln
145                 150                 155                 160

Ile Arg Ser Met Asp Pro Ser Ala Leu Ala Ser Asp Arg Phe Asn Leu
                165                 170                 175

Ile Leu Ala Asp Thr Asn Ser Asp Arg Leu Phe Thr Val Asn Asp Val
            180                 185                 190

Lys Val Gly Gly Ser Lys Tyr Gly Ile Ile Asn Leu Gln Ser Leu Lys
        195                 200                 205

Thr Pro Thr Leu Lys Val Phe Met His Glu Asn Leu Tyr Phe Thr Asn
    210                 215                 220

Arg Lys Val Asn Ser Val Cys Trp Ala Ser Leu Asn His Leu Asp Ser
225                 230                 235                 240

His Ile Leu Leu Cys Leu Met Gly Leu Ala Glu Thr Pro Gly Cys Ala
                245                 250                 255

Thr Leu Leu Pro Ala Ser Leu Phe Val Asn Ser His Pro Ala Gly Ile
            260                 265                 270

Asp Arg Pro Gly Met Leu Cys Ser Phe Arg Ile Pro Gly Ala Trp Ser
        275                 280                 285

Cys Ala Trp Ser Leu Asn Ile Gln Ala Asn Asn Cys Phe Ser Thr Gly
    290                 295                 300

Leu Ser Arg Arg Val Leu Leu Thr Asn Val Val Thr Gly His Arg Gln
305                 310                 315                 320

Ser Phe Gly Thr Asn Ser Asp Val Leu Ala Pro Leu Leu Phe Asn Gly
                325                 330                 335

Cys Arg Ser Gly Glu Ile Phe Ala Ile Asp Leu Arg Cys Gly Asn Gln
            340                 345                 350

Gly Lys Gly Trp Lys Ala Thr Arg Leu Phe His Asp Ser Ala Val Thr
        355                 360                 365
```

```
Ser Val Arg Ile Leu Gln Asp Glu Gln Tyr Leu Met Ala Ser Asp Met
    370                 375                 380

Ala Gly Lys Ile Lys Leu Trp Asp Leu Arg Thr Thr Lys Cys Val Arg
385                 390                 395                 400

Gln Tyr Glu Gly His Val Asn Glu Tyr Ala Tyr Leu Pro Leu His Val
                405                 410                 415

His Glu Glu Glu Gly Ile Leu Val Ala Val Gly Gln Asp Cys Tyr Thr
            420                 425                 430

Arg Ile Trp Ser Leu His Asp Ala Arg Leu Leu Arg Thr Ile Pro Ser
        435                 440                 445

Pro Tyr Pro Ala Ser Lys Ala Asp Ile Pro Ser Val Ala Phe Ser Ser
    450                 455                 460

Arg Leu Gly Gly Ser Arg Gly Ala Pro Gly Leu Leu Met Ala Val Gly
465                 470                 475                 480

Gln Asp Leu Tyr Cys Tyr Ser Tyr Ser
                485
```

<210> 79
<211> 489
<212> PRT
<213> Homo sapiens

<400> 79

```
Met Asn Lys Ser Arg Trp Gln Ser Arg Arg Arg His Gly Arg Arg Ser
  1               5                  10                  15

His Gln Gln Asn Pro Trp Phe Arg Leu Arg Asp Ser Glu Asp Arg Ser
             20                  25                  30

Asp Ser Gln Ala Ala Gln Pro Ala His Asp Ser Gly Tyr Gly Asp Asp
         35                  40                  45

Glu Ser Pro Ser Thr Ser Ser Gly Thr Ala Gly Thr Ser Ser Val Pro
     50                  55                  60

Gly Leu Pro Gly Phe Tyr Phe Asp Pro Glu Lys Lys Arg Tyr Phe Arg
 65                  70                  75                  80

Leu Leu Pro Gly His Asn Asn Cys Asn Pro Leu Thr Lys Glu Ser Ile
                 85                  90                  95

Arg Gln Lys Glu Met Glu Ser Lys Arg Leu Arg Leu Leu Gln Glu Glu
            100                 105                 110

Asp Arg Arg Lys Lys Ile Ala Arg Met Gly Phe Asn Ala Ser Ser Met
        115                 120                 125

Leu Arg Lys Ser Gln Leu Gly Phe Leu Asn Val Thr Asn Tyr Cys His
    130                 135                 140
```

```
Leu Ala His Glu Leu Arg Leu Ser Cys Met Glu Arg Lys Lys Val Gln
145                 150                 155                 160

Ile Arg Ser Met Asp Pro Ser Ala Leu Ala Ser Asp Arg Phe Asn Leu
                165                 170                 175

Ile Leu Ala Asp Thr Asn Ser Asp Arg Leu Phe Thr Val Asn Asp Val
            180                 185                 190

Lys Val Gly Gly Ser Lys Tyr Gly Ile Ile Asn Leu Gln Ser Leu Lys
        195                 200                 205

Thr Pro Thr Leu Lys Val Phe Met His Glu Asn Leu Tyr Phe Thr Asn
    210                 215                 220

Arg Lys Val Asn Ser Val Cys Trp Ala Ser Leu Asn His Leu Asp Ser
225                 230                 235                 240

His Ile Leu Leu Cys Leu Met Gly Leu Ala Glu Thr Pro Gly Cys Ala
                245                 250                 255

Thr Leu Leu Pro Ala Ser Leu Phe Val Asn Ser His Pro Ala Gly Ile
            260                 265                 270

Asp Arg Pro Gly Met Leu Cys Ser Phe Arg Ile Pro Gly Ala Trp Ser
        275                 280                 285

Cys Ala Trp Ser Leu Asn Ile Gln Ala Asn Asn Cys Phe Ser Thr Gly
    290                 295                 300

Leu Ser Arg Arg Val Leu Leu Thr Asn Val Val Thr Gly His Arg Gln
305                 310                 315                 320

Ser Phe Gly Thr Asn Ser Asp Val Met Ala Pro Leu Leu Phe Asn Gly
                325                 330                 335

Cys Arg Ser Gly Glu Ile Phe Ala Ile Asp Leu Arg Cys Gly Asn Gln
            340                 345                 350

Gly Lys Gly Trp Lys Ala Thr Arg Leu Phe His Asp Ser Ala Val Thr
        355                 360                 365

Ser Val Arg Ile Leu Gln Asp Glu Gln Tyr Leu Met Ala Ser Asp Met
    370                 375                 380

Ala Gly Lys Ile Lys Leu Trp Asp Leu Arg Thr Thr Lys Cys Val Arg
385                 390                 395                 400

Gln Tyr Glu Gly His Val Asn Glu Tyr Ala Tyr Leu Pro Leu His Val
                405                 410                 415

His Glu Glu Glu Gly Ile Leu Val Ala Val Gly Gln Asp Cys Tyr Thr
            420                 425                 430

Arg Ile Trp Ser Leu His Asp Ala Arg Leu Leu Arg Thr Ile Pro Ser
        435                 440                 445
```

```
Pro Tyr Pro Ala Ser Lys Ala Asp Ile Pro Ser Val Ala Phe Ser Ser
    450                 455                 460

Arg Leu Gly Gly Ser Arg Gly Ala Pro Gly Leu Leu Met Ala Val Gly
465                 470                 475                 480

Gln Asp Leu Tyr Cys Tyr Ser Tyr Ser
                485
```

<210> 80
<211> 430
<212> PRT
<213> Homo sapiens

<400> 80

```
Gly Arg Trp Gln Ser Arg Arg Arg His Gly Arg Arg Ser His Gln Gln
  1               5                  10                  15

Asn Pro Trp Phe Arg Leu Arg Asp Ser Glu Asp Arg Ser Asp Ser Arg
            20                  25                  30

Ala Ala Gln Pro Ala His Asp Ser Gly His Gly Asp Asp Glu Ser Pro
        35                  40                  45

Ser Thr Ser Ser Gly Thr Ala Gly Thr Ser Ser Val Pro Glu Leu Pro
    50                  55                  60

Gly Phe Tyr Phe Asp Pro Glu Lys Lys Arg Tyr Phe Arg Leu Leu Pro
65                  70                  75                  80

Gly His Asn Asn Cys Asn Pro Leu Thr Lys Glu Ser Ile Arg Gln Lys
                85                  90                  95

Glu Met Glu Ser Lys Arg Leu Arg Leu Leu Gln Glu Glu Asp Arg Arg
            100                 105                 110

Lys Lys Ile Ala Arg Met Gly Phe Asn Ala Ser Ser Met Leu Arg Lys
        115                 120                 125

Ser Gln Leu Gly Phe Leu Asn Val Thr Asn Tyr Cys His Leu Ala His
    130                 135                 140

Glu Leu Arg Leu Ser Cys Met Glu Arg Lys Lys Val Gln Ile Arg Ser
145                 150                 155                 160

Met Asp Pro Ser Ala Leu Ala Ser Asp Arg Phe Asn Leu Ile Leu Ala
                165                 170                 175

Asp Thr Asn Ser Asp Arg Leu Phe Thr Val Asn Asp Val Thr Val Gly
            180                 185                 190

Gly Ser Lys Tyr Gly Ile Ile Asn Leu Gln Ser Leu Lys Thr Pro Thr
        195                 200                 205

Leu Lys Val Phe Met His Glu Asn Leu Tyr Phe Thr Asn Arg Lys Val
```

```
    210                 215                 220

Asn Ser Val Cys Trp Ala Ser Leu Asn His Leu Asp Ser His Ile Leu
225                 230                 235                 240

Leu Cys Leu Met Gly Leu Ala Glu Thr Pro Gly Cys Ala Thr Leu Leu
                245                 250                 255

Pro Ala Ser Leu Phe Val Asn Ser His Pro Gly Ile Asp Arg Pro Gly
            260                 265                 270

Met Leu Cys Ser Phe Arg Ile Pro Gly Ala Trp Ser Cys Ala Trp Ser
        275                 280                 285

Leu Asn Ile Gln Ala Asn Asn Cys Phe Ser Thr Gly Leu Ser Arg Arg
    290                 295                 300

Val Leu Leu Thr Asn Val Val Thr Gly His Arg Gln Ser Phe Gly Thr
305                 310                 315                 320

Asn Ser Asp Val Leu Ala Gln Gln Phe Ala Phe Met Ala Pro Leu Leu
                325                 330                 335

Phe Asn Gly Cys Arg Ser Gly Glu Ile Phe Ala Ile Asp Leu Arg Cys
            340                 345                 350

Gly Asn Gln Gly Lys Gly Trp Lys Ala Thr Arg Leu Phe His Asp Ser
        355                 360                 365

Ala Val Thr Ser Val Arg Ile Leu Gln Asp Glu Gln Tyr Leu Met Ala
    370                 375                 380

Ser Asp Met Ala Gly Lys Ile Lys Leu Trp Asp Leu Arg Thr Thr Lys
385                 390                 395                 400

Cys Val Arg Gln Tyr Glu Gly His Val Asn Glu Tyr Ala Tyr Leu Pro
                405                 410                 415

Leu His Val His Glu Glu Glu Gly Ile Leu Val Ala Gly Thr
            420                 425                 430


<210> 81
<211> 519
<212> PRT
<213> Mus musculus

<400> 81
Met Asp Arg Asn Ile Trp Lys Ser Arg Arg Arg Arg Gly Arg Ser Arg
  1               5                  10                  15

His Gln Ser Pro Ala Leu Gly Gln Cys Asp Ser Ser Glu Arg Tyr Ala
            20                  25                  30

Thr Gly Ala Ser Gln Ser Ser Gln Asp Ser Gly His His Asp Ala Glu
        35                  40                  45
```

```
Ser Pro Ser Thr Ser Ser Ser Arg Thr Gly Glu Ser Ser Val Pro Glu
     50                  55                  60

Leu Pro Gly Phe Tyr Phe Asp Pro Glu Lys Asn Arg Tyr Phe Arg Leu
 65                  70                  75                  80

Leu Pro Gly His Asn Asn Cys Asn Pro Leu Thr Lys Glu Gly Ile Gln
                 85                  90                  95

Gln Lys Glu Met Glu Ser Arg Arg Leu Gln Leu Leu Gln Gln Glu Asp
            100                 105                 110

Met Gln Lys Lys Lys Ile Thr Arg Val Gly Phe Asn Ala Ser Ser Ile
        115                 120                 125

Leu Arg Lys Asn Gln Leu Gly Phe Leu Asn Phe Ser Ser Tyr Cys Arg
    130                 135                 140

Leu Ser His Glu Leu Arg Val Ser Cys Met Glu Arg Lys Lys Val Glu
145                 150                 155                 160

Ile Gln Ser Ser Asp Pro Ser Ala Leu Ala Ser Asp Arg Phe Asn Phe
                165                 170                 175

Ile Met Ala Asp Thr Thr Ser Asp Arg Leu Phe Thr Val Asn Asp Val
            180                 185                 190

Lys Ile Gly Gly Ser Lys Tyr Gly Ile Ile Asn Leu Gln Gly Leu Lys
        195                 200                 205

Ala Pro Thr Phe Glu Val Gln Met His Glu Asn Leu Tyr Phe Thr Asn
    210                 215                 220

Arg Lys Val Asn Ser Val Cys Trp Ala Ser Leu Asn His Leu Asp Ser
225                 230                 235                 240

His Ile Leu Leu Cys Leu Met Gly Leu Ala Glu Thr Pro Gly Cys Ala
                245                 250                 255

Thr Leu Leu Pro Ala Ser Leu Phe Val Ser Asn His Gln Ala Gly Thr
            260                 265                 270

Asp Gln Pro Gly Met Leu Cys Ser Phe Arg Ile Pro Gly Ala Trp Ser
        275                 280                 285

Cys Ala Trp Ser Leu Asn Val Gln Ala Asn Asn Cys Phe Ser Thr Gly
    290                 295                 300

Leu Ser Arg Arg Val Leu Leu Thr Asn Val Val Thr Gly His Arg Gln
305                 310                 315                 320

Ser Tyr Arg Ile Asn Ser Asp Val Leu Ala Gln Gln Phe Ala Val Lys
                325                 330                 335

Thr Pro Leu Leu Phe Asn Gly Cys Arg Ser Gly Glu Ile Phe Ala Ile
            340                 345                 350
```

```
Asp Leu Arg Ser Pro Ser Gln Ala Lys Gly Trp Lys Ala Thr Gln Ile
        355                 360                 365

Phe His Asp Ser Ala Val Thr Ser Val Gln Val Phe Lys Glu Glu Gln
    370                 375                 380

His Leu Met Ala Ser Asp Met Ser Gly Lys Ile Lys Leu Trp Asp Leu
385                 390                 395                 400

Arg Ala Thr Lys Cys Val Arg Gln Tyr Glu Gly His Val Asn Glu Tyr
                405                 410                 415

Ala Tyr Leu Pro Leu His Met His Glu Glu Glu Gly Ile Leu Val Ala
            420                 425                 430

Val Gly Gln Asp Cys Tyr Thr Arg Ile Trp Ser Leu His Asp Ala Arg
        435                 440                 445

Leu Leu Arg Thr Ile Pro Ser Pro Cys Pro Thr Ser Lys Ala Asn Ile
    450                 455                 460

Pro Ser Val Ala Phe Ser Pro Arg Leu Gly Gly Ser Arg Gly Ala Pro
465                 470                 475                 480

Gly Leu Leu Met Ala Val Gln Gln Asp Leu Tyr Cys Phe Ala Tyr Ser
                485                 490                 495

Ser Ser Cys Pro Asp Ser Gln Glu Glu Gly Arg Trp Glu Leu Pro Ser
            500                 505                 510

Val Ser Asn Glu Asp Ile Leu
        515
```

<210> 82
<211> 333
<212> PRT
<213> Homo sapiens

<400> 82

```
Met Glu Ser Lys Arg Leu Arg Leu Leu Gln Glu Glu Asp Arg Arg Lys
  1               5                  10                  15

Lys Ile Ala Arg Met Gly Phe Asn Ala Ser Ser Met Leu Arg Lys Ser
             20                  25                  30

Gln Leu Gly Phe Leu Asn Val Thr Asn Tyr Cys His Leu Ala His Glu
         35                  40                  45

Leu Arg Leu Ser Cys Met Glu Arg Lys Lys Val Gln Ile Arg Ser Met
     50                  55                  60

Asp Pro Ser Ala Leu Ala Ser Asp Arg Phe Asn Leu Ile Leu Ala Asp
 65                  70                  75                  80

Thr Asn Ser Asp Arg Leu Phe Thr Val Asn Asp Val Lys Val Gly Gly
                 85                  90                  95
```

```
Ser Lys Tyr Gly Ile Ile Asn Leu Gln Ser Leu Lys Thr Pro Thr Leu
            100                 105                 110

Lys Val Phe Met His Glu Asn Leu Tyr Phe Thr Asn Arg Lys Val Asn
        115                 120                 125

Ser Val Cys Trp Ala Ser Leu Asn His Leu Asp Ser His Ile Leu Leu
    130                 135                 140

Cys Leu Met Gly Leu Ala Glu Thr Pro Gly Cys Ala Thr Leu Leu Pro
145                 150                 155                 160

Ala Ser Leu Phe Val Asn Ser His Pro Gly Ile Asp Arg Pro Gly Met
                165                 170                 175

Leu Cys Ser Phe Arg Ile Pro Gly Ala Trp Ser Cys Ala Trp Ser Leu
            180                 185                 190

Asn Ile Gln Ala Asn Asn Cys Phe Ser Thr Gly Leu Ser Arg Arg Val
        195                 200                 205

Leu Leu Thr Asn Val Val Thr Gly His Arg Gln Ser Phe Gly Thr Asn
    210                 215                 220

Ser Asp Val Leu Ala Gln Gln Phe Ala Leu Met Ala Pro Leu Leu Phe
225                 230                 235                 240

Asn Gly Cys Arg Ser Gly Glu Ile Phe Ala Ile Asp Leu Arg Cys Gly
                245                 250                 255

Asn Gln Gly Lys Gly Trp Lys Ala Thr Arg Leu Phe His Asp Ser Ala
            260                 265                 270

Val Thr Ser Val Arg Ile Leu Gln Asp Glu Gln Tyr Leu Met Ala Ser
        275                 280                 285

Asp Met Ala Gly Lys Ile Lys Leu Trp Asp Leu Arg Thr Thr Lys Cys
    290                 295                 300

Val Arg Gln Tyr Glu Gly His Val Asn Glu Tyr Ala Tyr Leu Pro Leu
305                 310                 315                 320

His Val His Glu Glu Glu Gly Ile Leu Val Ala Gly Thr
                325                 330
```

<210> 83
<211> 345
<212> PRT
<213> Bos taurus

<400> 83

```
Met Gly Val Cys Gly Ser Leu Phe Gln Pro Trp Lys Cys Leu Val Val
  1               5                  10                  15

Val Ser Leu Arg Leu Leu Phe Leu Val Pro Thr Gly Val Pro Val Arg
```

```
            20                  25                  30

Ser Gly Asp Ala Thr Phe Pro Lys Ala Met Asp Asn Val Thr Val Arg
         35                  40                  45

Gln Gly Glu Ser Ala Thr Leu Arg Cys Thr Ile Asp Asp Arg Val Thr
     50                  55                  60

Arg Val Ala Trp Leu Asn Arg Ser Thr Ile Leu Tyr Ala Gly Asn Asp
 65                  70                  75                  80

Lys Trp Ser Ile Asp Pro Arg Val Ile Ile Leu Val Asn Thr Pro Thr
                 85                  90                  95

Gln Tyr Ser Ile Met Ile Gln Asn Val Asp Val Tyr Asp Glu Gly Pro
            100                 105                 110

Tyr Thr Cys Ser Val Gln Thr Asp Asn His Pro Lys Thr Ser Arg Val
        115                 120                 125

His Leu Ile Val Gln Val Pro Pro Gln Ile Met Asn Ile Ser Ser Asp
    130                 135                 140

Val Thr Val Asn Glu Gly Ser Ser Val Thr Leu Leu Cys Leu Ala Ile
145                 150                 155                 160

Gly Arg Pro Glu Pro Thr Val Thr Trp Arg His Leu Ser Val Lys Glu
                165                 170                 175

Gly Gln Gly Phe Val Ser Glu Asp Glu Tyr Leu Glu Ile Ser Asp Ile
            180                 185                 190

Lys Arg Asp Gln Ser Gly Glu Tyr Glu Cys Ser Ala Leu Asn Asp Val
        195                 200                 205

Ala Ala Pro Asp Val Arg Lys Val Lys Ile Thr Val Asn Tyr Pro Pro
    210                 215                 220

Tyr Ile Ser Lys Ala Lys Asn Thr Gly Val Ser Val Gly Gln Lys Gly
225                 230                 235                 240

Ile Leu Ser Cys Glu Ala Ser Ala Val Pro Met Ala Glu Phe Gln Trp
                245                 250                 255

Phe Lys Glu Asp Thr Arg Leu Ala Thr Gly Leu Asp Gly Met Arg Ile
            260                 265                 270

Glu Asn Lys Gly His Ile Ser Thr Leu Thr Phe Phe Asn Val Ser Glu
        275                 280                 285

Lys Asp Tyr Gly Asn Tyr Thr Cys Val Ala Thr Asn Lys Leu Gly Ile
    290                 295                 300

Thr Asn Ala Ser Ile Thr Leu Tyr Gly Pro Gly Ala Val Ile Asp Gly
305                 310                 315                 320

Val Asn Ser Ala Ser Arg Ala Leu Ala Cys Leu Trp Leu Ser Gly Thr
```

```
                325                 330                 335

Leu Phe Ala His Phe Phe Ile Lys Phe
            340                 345


<210> 84
<211> 345
<212> PRT
<213> Homo sapiens

<400> 84
Met Gly Val Cys Gly Tyr Leu Phe Leu Pro Trp Lys Cys Leu Val Val
  1               5                  10                  15

Val Ser Leu Arg Leu Leu Phe Leu Val Pro Thr Gly Val Pro Val Arg
             20                  25                  30

Ser Gly Asp Ala Thr Phe Pro Lys Ala Met Asp Asn Val Thr Val Arg
         35                  40                  45

Gln Gly Glu Ser Ala Thr Leu Arg Cys Thr Ile Asp Asp Arg Val Thr
     50                  55                  60

Arg Val Ala Trp Leu Asn Arg Ser Thr Ile Leu Tyr Ala Gly Asn Asp
 65                  70                  75                  80

Lys Trp Ser Ile Asp Pro Arg Val Ile Ile Leu Val Asn Thr Pro Thr
                 85                  90                  95

Gln Tyr Ser Ile Met Ile Gln Asn Val Asp Val Tyr Asp Glu Gly Pro
            100                 105                 110

Tyr Thr Cys Ser Val Gln Thr Asp Asn His Pro Lys Thr Ser Arg Val
        115                 120                 125

His Leu Ile Val Gln Val Pro Pro Gln Ile Met Asn Ile Ser Ser Asp
    130                 135                 140

Ile Thr Val Asn Glu Gly Ser Ser Val Thr Leu Leu Cys Leu Ala Ile
145                 150                 155                 160

Gly Arg Pro Glu Pro Thr Val Thr Trp Arg His Leu Ser Val Lys Glu
                165                 170                 175

Gly Gln Gly Phe Val Ser Glu Asp Glu Tyr Leu Glu Ile Ser Asp Ile
            180                 185                 190

Lys Arg Asp Gln Ser Gly Glu Tyr Glu Cys Ser Ala Leu Asn Asp Val
        195                 200                 205

Ala Ala Pro Asp Val Arg Lys Val Lys Ile Thr Val Asn Tyr Pro Pro
    210                 215                 220

Tyr Ile Ser Lys Ala Lys Asn Thr Gly Val Ser Val Gly Gln Lys Gly
225                 230                 235                 240
```

Ile Leu Ser Cys Glu Ala Ser Ala Val Pro Met Ala Glu Phe Gln Trp
245 250 255

Phe Lys Glu Glu Thr Arg Leu Ala Thr Gly Leu Asp Gly Met Arg Ile
260 265 270

Glu Asn Lys Gly Arg Met Ser Thr Leu Thr Phe Phe Asn Val Ser Glu
275 280 285

Lys Asp Tyr Gly Asn Tyr Thr Cys Val Ala Thr Asn Lys Leu Gly Asn
290 295 300

Thr Asn Ala Ser Ile Thr Leu Tyr Gly Pro Gly Ala Val Ile Asp Gly
305 310 315 320

Val Asn Ser Ala Ser Arg Ala Leu Ala Cys Leu Trp Leu Ser Gly Thr
325 330 335

Leu Leu Ala His Phe Phe Ile Lys Phe
340 345

<210> 85
<211> 345
<212> PRT
<213> Rattus norvegicus

<400> 85
Met Gly Val Cys Gly Tyr Leu Phe Leu Pro Trp Lys Cys Leu Val Val
1 5 10 15

Val Ser Leu Arg Leu Leu Phe Leu Val Pro Thr Gly Val Pro Val Arg
20 25 30

Ser Gly Asp Ala Thr Phe Pro Lys Ala Met Asp Asn Val Thr Val Arg
35 40 45

Gln Gly Glu Ser Ala Thr Leu Arg Cys Thr Ile Asp Asp Arg Val Thr
50 55 60

Arg Val Ala Trp Leu Asn Arg Ser Thr Ile Leu Tyr Ala Gly Asn Asp
65 70 75 80

Lys Trp Ser Ile Asp Pro Arg Val Ile Ile Leu Val Asn Thr Pro Thr
85 90 95

Gln Tyr Ser Ile Met Ile Gln Asn Val Asp Val Tyr Asp Glu Gly Pro
100 105 110

Tyr Thr Cys Ser Val Gln Thr Asp Asn His Pro Lys Thr Ser Arg Val
115 120 125

His Leu Ile Val Gln Val Pro Pro Gln Ile Met Asn Ile Ser Ser Asp
130 135 140

Ile Thr Val Asn Glu Ile Ser Ser Val Thr Leu Leu Cys Leu Ala Ile
145 150 155 160

```
Gly Arg Pro Glu Pro Thr Val Thr Trp Arg His Leu Ser Val Lys Glu
                165                 170                 175

Gly Gln Gly Phe Val Ser Glu Asp Glu Tyr Leu Glu Ile Ser Asp Ile
            180                 185                 190

Lys Arg Asp Gln Ser Gly Glu Tyr Glu Cys Ser Ala Leu Asn Asp Val
        195                 200                 205

Ala Ala Pro Asp Val Arg Lys Val Lys Ile Thr Val Asn Tyr Pro Pro
    210                 215                 220

Tyr Ile Ser Lys Ala Lys Asn Thr Gly Val Ser Val Gly Gln Lys Gly
225                 230                 235                 240

Ile Leu Ser Cys Glu Ala Ser Ala Val Pro Met Ala Glu Phe Gln Trp
                245                 250                 255

Phe Lys Glu Asp Thr Arg Leu Ala Thr Gly Leu Asp Gly Val Arg Ile
            260                 265                 270

Glu Asn Lys Gly Arg Ile Ser Thr Leu Thr Phe Phe Asn Val Ser Glu
        275                 280                 285

Lys Asp Tyr Gly Asn Tyr Thr Cys Val Ala Thr Asn Lys Leu Gly Asn
    290                 295                 300

Thr Asn Ala Ser Ile Thr Leu Tyr Gly Pro Gly Ala Val Ile Asp Gly
305                 310                 315                 320

Val Asn Ser Ala Ser Arg Ala Leu Ala Cys Leu Trp Leu Ser Gly Thr
                325                 330                 335

Phe Phe Ala His Phe Phe Ile Lys Phe
            340                 345


<210> 86
<211> 338
<212> PRT
<213> Rattus norvegicus

<400> 86
Met Tyr His Pro Ala Tyr Trp Ile Val Phe Ser Ala Thr Thr Ala Leu
  1               5                  10                  15

Leu Phe Ile Pro Gly Val Pro Val Arg Ser Gly Asp Ala Thr Phe Pro
             20                  25                  30

Lys Ala Met Asp Asn Val Thr Val Arg Gln Gly Glu Ser Ala Thr Leu
         35                  40                  45

Arg Cys Thr Ile Asp Asp Arg Val Thr Arg Val Ala Trp Leu Asn Arg
     50                  55                  60

Ser Thr Ile Leu Tyr Ala Gly Asn Asp Lys Trp Ser Ile Asp Pro Arg
```

```
65                  70                  75                  80

Val Ile Ile Leu Val Asn Thr Pro Thr Gln Tyr Ser Ile Met Ile Gln
                85                  90                  95

Asn Val Asp Val Tyr Asp Glu Gly Pro Tyr Thr Cys Ser Val Gln Thr
            100                 105                 110

Asp Asn His Pro Lys Thr Ser Arg Val His Leu Ile Val Gln Val Pro
        115                 120                 125

Pro Gln Ile Met Asn Ile Ser Ser Asp Ile Thr Val Asn Glu Ile Ser
    130                 135                 140

Ser Val Thr Leu Leu Cys Leu Ala Ile Gly Arg Pro Glu Pro Thr Val
145                 150                 155                 160

Thr Trp Arg His Leu Ser Val Lys Glu Gly Gln Gly Phe Val Ser Glu
                165                 170                 175

Asp Glu Tyr Leu Glu Ile Ser Asp Ile Lys Arg Asp Gln Ser Gly Glu
            180                 185                 190

Tyr Glu Cys Ser Ala Leu Asn Asp Val Ala Ala Pro Asp Val Arg Lys
        195                 200                 205

Val Lys Ile Thr Val Asn Tyr Pro Pro Tyr Ile Ser Lys Ala Lys Asn
    210                 215                 220

Thr Gly Val Ser Val Gly Gln Lys Gly Ile Leu Ser Cys Glu Ala Ser
225                 230                 235                 240

Ala Val Pro Met Ala Glu Phe Gln Trp Phe Lys Glu Asp Thr Arg Leu
                245                 250                 255

Ala Thr Gly Leu Asp Gly Val Arg Ile Glu Asn Lys Gly Arg Ile Ser
            260                 265                 270

Thr Leu Thr Phe Phe Asn Val Ser Glu Lys Asp Tyr Gly Asn Tyr Thr
        275                 280                 285

Cys Val Ala Thr Asn Lys Leu Gly Asn Thr Asn Ala Ser Ile Thr Leu
    290                 295                 300

Tyr Gly Pro Gly Ala Val Ile Asp Gly Val Asn Ser Ala Ser Arg Ala
305                 310                 315                 320

Leu Ala Cys Leu Trp Leu Ser Gly Thr Phe Phe Ala His Phe Phe Ile
                325                 330                 335

Lys Phe
```

<210> 87
<211> 344
<212> PRT

<213> Gallus gallus

<400> 87

```
Met Gly Val Gly Gly Cys Leu Ala Leu Pro Trp Arg Cys Leu Val Val
 1               5                  10                  15

Leu Cys Leu Arg Leu Leu Phe Leu Val Pro Ala Gly Val Pro Val Arg
            20                  25                  30

Ser Gly Asp Ala Thr Phe Pro Lys Ala Met Asp Asn Val Thr Val Arg
        35                  40                  45

Gln Gly Glu Ser Ala Thr Leu Arg Cys Ser Val Asp Asn Arg Val Thr
    50                  55                  60

Arg Val Ala Trp Leu Asn Arg Ser Ser Ile Leu Tyr Ala Gly Asn Asp
65                  70                  75                  80

Lys Trp Cys Leu Asp Pro Arg Val Val Leu Leu Ala Asn Thr Lys Thr
                85                  90                  95

Gln Tyr Ser Ile Gln Ile His Asp Val Asp Val Tyr Asp Glu Gly Pro
            100                 105                 110

Tyr Thr Cys Ser Val Gln Thr Asp Asn His Pro Lys Thr Ser Arg Val
        115                 120                 125

His Leu Ile Val Gln Val Ser Pro Lys Ile Thr Glu Ile Ser Ser Asp
    130                 135                 140

Ile Ser Ile Asn Glu Gly Gly Asn Val Ser Leu Thr Cys Ile Ala Thr
145                 150                 155                 160

Gly Arg Pro Asp Pro Thr Ile Thr Trp Arg His Ile Ser Pro Lys Ala
                165                 170                 175

Val Gly Phe Ile Ser Glu Asp Glu Tyr Leu Glu Ile Thr Gly Ile Thr
            180                 185                 190

Arg Glu Gln Ser Gly Glu Tyr Glu Cys Ser Ala Ser Asn Asp Val Ala
        195                 200                 205

Ala Pro Val Val Gln Arg Val Lys Val Thr Val Asn Tyr Pro Pro Tyr
    210                 215                 220

Ile Ser Asp Ala Lys Ser Thr Gly Val Pro Val Gly Gln Lys Gly Ile
225                 230                 235                 240

Leu Met Cys Glu Ala Ser Ala Val Pro Ser Ala Asp Phe Gln Trp Tyr
                245                 250                 255

Lys Asp Asp Lys Arg Leu Ala Glu Gly Gln Lys Gly Leu Lys Val Glu
            260                 265                 270

Asn Lys Ala Phe Phe Ser Arg Leu Thr Phe Phe Asn Val Ser Glu Gln
        275                 280                 285
```

```
Asp Tyr Gly Asn Tyr Thr Cys Val Ala Ser Asn Gln Leu Gly Asn Thr
    290                 295                 300

Asn Ala Ser Met Ile Leu Tyr Gly Pro Gly Ala Val His Asp Gly Asn
305                 310                 315                 320

Ser Gly Ala Trp Arg Arg Gly Ser Cys Ala Trp Leu Leu Ala Leu Pro
                325                 330                 335

Leu Ala Gln Leu Ala Arg Gln Phe
            340
```

<210> 88
<211> 86
<212> PRT
<213> Homo sapiens

<400> 88

```
Pro Pro Ser Val Thr Val Lys Glu Gly Glu Ser Val Thr Leu Ser Cys
  1               5                  10                  15

Glu Ala Ser Gly Asn Pro Pro Pro Thr Val Thr Trp Tyr Lys Gln Gly
             20                  25                  30

Gly Lys Leu Leu Ala Glu Ser Gly Arg Phe Ser Val Ser Arg Ser Gly
         35                  40                  45

Gly Asn Ser Thr Leu Thr Ile Ser Asn Val Thr Pro Glu Asp Ser Gly
     50                  55                  60

Thr Tyr Thr Cys Ala Ala Thr Asn Ser Ser Gly Ser Ala Ser Ser Gly
 65                  70                  75                  80

Thr Thr Leu Thr Val Leu
                85
```

<210> 89
<211> 86
<212> PRT
<213> Homo sapiens

<400> 89

```
Pro Pro Ser Val Thr Val Lys Glu Gly Glu Ser Val Thr Leu Ser Cys
  1               5                  10                  15

Glu Ala Ser Gly Asn Pro Pro Pro Thr Val Thr Trp Tyr Lys Gln Gly
             20                  25                  30

Gly Lys Leu Leu Ala Glu Ser Gly Arg Phe Ser Val Ser Arg Ser Gly
         35                  40                  45

Gly Asn Ser Thr Leu Thr Ile Ser Asn Val Thr Pro Glu Asp Ser Gly
     50                  55                  60

Thr Tyr Thr Cys Ala Ala Thr Asn Ser Ser Gly Ser Ala Ser Ser Gly
```

65 70 75 80

Thr Thr Leu Thr Val Leu
85

<210> 90
<211> 86
<212> PRT
<213> Homo sapiens

<400> 90
Pro Pro Ser Val Thr Val Lys Glu Gly Glu Ser Val Thr Leu Ser Cys
1 5 10 15

Glu Ala Ser Gly Asn Pro Pro Pro Thr Val Thr Trp Tyr Lys Gln Gly
20 25 30

Gly Lys Leu Leu Ala Glu Ser Gly Arg Phe Ser Val Ser Arg Ser Gly
35 40 45

Gly Asn Ser Thr Leu Thr Ile Ser Asn Val Thr Pro Glu Asp Ser Gly
50 55 60

Thr Tyr Thr Cys Ala Ala Thr Asn Ser Ser Gly Ser Ala Ser Ser Gly
65 70 75 80

Thr Thr Leu Thr Val Leu
85

<210> 91
<211> 63
<212> PRT
<213> Homo sapiens

<400> 91
Leu Glu Gly Glu Ser Val Thr Leu Thr Cys Pro Ala Ser Gly Asp Pro
1 5 10 15

Val Pro Asn Ile Thr Trp Leu Lys Asp Gly Lys Pro Leu Pro Glu Ser
20 25 30

Arg Val Val Ala Ser Gly Ser Thr Leu Thr Ile Lys Asn Val Ser Leu
35 40 45

Glu Asp Ser Gly Leu Tyr Thr Cys Val Ala Arg Asn Ser Val Gly
50 55 60

<210> 92
<211> 63
<212> PRT
<213> Homo sapiens

<400> 92
Leu Glu Gly Glu Ser Val Thr Leu Thr Cys Pro Ala Ser Gly Asp Pro

```
  1               5                  10                  15

Val Pro Asn Ile Thr Trp Leu Lys Asp Gly Lys Pro Leu Pro Glu Ser
             20                  25                  30

Arg Val Val Ala Ser Gly Ser Thr Leu Thr Ile Lys Asn Val Ser Leu
         35                  40                  45

Glu Asp Ser Gly Leu Tyr Thr Cys Val Ala Arg Asn Ser Val Gly
     50                  55                  60
```

<210> 93
<211> 68
<212> PRT
<213> Homo sapiens

<400> 93

```
Gly Glu Ser Val Thr Leu Thr Cys Ser Val Ser Gly Tyr Pro Pro Asp
  1               5                  10                  15

Pro Thr Val Thr Trp Leu Arg Asp Gly Lys Glu Ile Glu Leu Leu Gly
             20                  25                  30

Ser Ser Glu Ser Arg Val Ser Ser Gly Gly Arg Phe Ser Ile Ser Ser
         35                  40                  45

Leu Ser Leu Thr Ile Ser Ser Val Thr Pro Glu Asp Ser Gly Thr Tyr
     50                  55                  60

Thr Cys Val Val
 65
```

<210> 94
<211> 398
<212> PRT
<213> Homo sapiens

<400> 94

```
Met Trp Leu Leu Leu Thr Met Ala Ser Leu Ile Ser Val Leu Gly Thr
  1               5                  10                  15

Thr His Gly Leu Phe Gly Lys Leu His Pro Gly Ser Pro Glu Val Thr
             20                  25                  30

Met Asn Ile Ser Gln Met Ile Thr Tyr Trp Gly Tyr Pro Asn Glu Glu
         35                  40                  45

Tyr Glu Val Val Thr Glu Asp Gly Tyr Ile Leu Glu Val Asn Arg Ile
     50                  55                  60

Pro Tyr Gly Lys Lys Asn Ser Gly Asn Thr Gly Gln Arg Pro Val Val
 65                  70                  75                  80

Phe Leu Gln His Gly Leu Leu Ala Ser Ala Thr Asn Trp Ile Ser Asn
                 85                  90                  95
```

Leu Pro Asn Asn Ser Leu Ala Phe Ile Leu Ala Asp Ala Gly Tyr Asp
100 105 110

Val Trp Leu Gly Asn Ser Arg Gly Asn Thr Trp Ala Arg Arg Asn Leu
115 120 125

Tyr Tyr Ser Pro Asp Ser Val Glu Phe Trp Ala Phe Ser Phe Asp Glu
130 135 140

Met Ala Lys Tyr Asp Leu Pro Ala Thr Ile Asp Phe Ile Val Lys Lys
145 150 155 160

Thr Gly Gln Lys Gln Leu His Tyr Val Gly His Ser Gln Gly Thr Thr
165 170 175

Ile Gly Phe Ile Ala Phe Ser Thr Asn Pro Ser Leu Ala Lys Arg Ile
180 185 190

Lys Thr Phe Tyr Ala Leu Ala Pro Val Ala Thr Val Lys Tyr Thr Lys
195 200 205

Ser Leu Ile Asn Lys Leu Arg Phe Val Pro Gln Ser Leu Phe Lys Phe
210 215 220

Ile Phe Gly Asp Lys Ile Phe Tyr Pro His Asn Phe Phe Asp Gln Phe
225 230 235 240

Leu Ala Thr Glu Val Cys Ser Arg Glu Met Leu Asn Leu Leu Cys Ser
245 250 255

Asn Ala Leu Phe Ile Ile Cys Gly Phe Asp Ser Lys Asn Phe Asn Thr
260 265 270

Ser Arg Leu Asp Val Tyr Leu Ser His Asn Pro Ala Gly Thr Ser Val
275 280 285

Gln Asn Met Phe His Trp Thr Gln Ala Val Lys Ser Gly Lys Phe Gln
290 295 300

Ala Tyr Asp Trp Gly Ser Pro Val Gln Asn Arg Met His Tyr Asp Gln
305 310 315 320

Ser Gln Pro Pro Tyr Tyr Asn Val Thr Ala Met Asn Val Pro Ile Ala
325 330 335

Val Trp Asn Gly Gly Lys Asp Leu Leu Ala Asp Pro Gln Asp Val Gly
340 345 350

Leu Leu Leu Pro Lys Leu Pro Asn Leu Ile Tyr His Lys Glu Ile Pro
355 360 365

Phe Tyr Asn His Leu Asp Phe Ile Trp Ala Met Asp Ala Pro Gln Glu
370 375 380

Val Tyr Asn Asp Ile Val Ser Met Ile Ser Glu Asp Lys Lys
385 390 395

<210> 95
<211> 398
<212> PRT
<213> Homo sapiens

<400> 95
Met Trp Leu Leu Leu Thr Met Ala Ser Leu Ile Ser Val Leu Gly Thr
1 5 10 15

Thr His Gly Leu Phe Gly Lys Leu His Pro Gly Ser Pro Glu Val Thr
20 25 30

Met Asn Ile Ser Gln Met Ile Thr Tyr Trp Gly Tyr Pro Asn Glu Glu
35 40 45

Tyr Glu Val Val Thr Glu Asp Gly Tyr Ile Leu Glu Val Asn Arg Ile
50 55 60

Pro Tyr Gly Lys Lys Asn Ser Gly Asn Thr Gly Gln Arg Pro Val Val
65 70 75 80

Phe Leu Gln His Gly Leu Leu Ala Ser Ala Thr Asn Trp Ile Ser Asn
85 90 95

Leu Pro Asn Asn Ser Leu Ala Phe Ile Leu Ala Asp Ala Gly Tyr Asp
100 105 110

Val Trp Leu Gly Asn Ser Arg Gly Asn Thr Trp Ala Arg Arg Asn Leu
115 120 125

Tyr Tyr Ser Pro Asp Ser Val Glu Phe Trp Ala Phe Ser Phe Asp Glu
130 135 140

Met Ala Lys Tyr Asp Leu Pro Ala Thr Ile Asp Phe Ile Val Lys Lys
145 150 155 160

Thr Gly Gln Lys Gln Leu His Tyr Val Gly His Ser Gln Gly Thr Thr
165 170 175

Ile Gly Phe Ile Ala Phe Ser Thr Asn Pro Ser Leu Ala Lys Arg Ile
180 185 190

Lys Thr Phe Tyr Ala Leu Ala Pro Val Ala Thr Val Lys Tyr Thr Lys
195 200 205

Ser Leu Ile Asn Lys Leu Arg Phe Val Pro Gln Ser Leu Phe Lys Phe
210 215 220

Ile Phe Gly Asp Lys Ile Phe Tyr Pro His Asn Phe Phe Asp Gln Phe
225 230 235 240

Leu Ala Thr Glu Val Cys Ser Arg Glu Met Leu Asn Leu Leu Cys Ser
245 250 255

Asn Ala Leu Phe Ile Ile Cys Gly Phe Asp Ser Lys Asn Phe Asn Thr

```
            260                 265                 270

Ser Arg Leu Asp Val Tyr Leu Ser His Asn Pro Ala Gly Thr Ser Val
        275                 280                 285

Gln Asn Met Phe His Trp Thr Gln Ala Val Lys Ser Gly Lys Phe Gln
    290                 295                 300

Ala Tyr Asp Trp Gly Ser Pro Val Gln Asn Arg Met His Tyr Asp Gln
305                 310                 315                 320

Ser Gln Pro Pro Tyr Tyr Asn Val Thr Ala Met Asn Val Pro Ile Ala
                325                 330                 335

Val Trp Asn Gly Gly Lys Asp Leu Leu Ala Asp Pro Gln Asp Val Gly
            340                 345                 350

Leu Leu Leu Pro Lys Leu Pro Asn Leu Ile Tyr His Lys Glu Ile Pro
        355                 360                 365

Phe Tyr Asn His Leu Asp Phe Ile Trp Ala Met Asp Ala Pro Gln Glu
    370                 375                 380

Val Tyr Asn Asp Ile Val Ser Met Ile Ser Glu Asp Lys Lys
385                 390                 395


<210> 96
<211> 398
<212> PRT
<213> Canis familiaris

<400> 96
Met Trp Leu Leu Leu Thr Ala Ala Ser Val Ile Ser Thr Leu Gly Thr
  1               5                  10                  15

Thr His Gly Leu Phe Gly Lys Leu His Pro Thr Asn Pro Glu Val Thr
             20                  25                  30

Met Asn Ile Ser Gln Met Ile Thr Tyr Trp Gly Tyr Pro Ala Glu Glu
         35                  40                  45

Tyr Glu Val Val Thr Glu Asp Gly Tyr Ile Leu Gly Ile Asp Arg Ile
     50                  55                  60

Pro Tyr Gly Arg Lys Asn Ser Glu Asn Ile Gly Arg Arg Pro Val Ala
 65                  70                  75                  80

Phe Leu Gln His Gly Leu Leu Ala Ser Ala Thr Asn Trp Ile Ser Asn
                 85                  90                  95

Leu Pro Asn Asn Ser Leu Ala Phe Ile Leu Ala Asp Ala Gly Tyr Asp
            100                 105                 110

Val Trp Leu Gly Asn Ser Arg Gly Asn Thr Trp Ala Arg Arg Asn Leu
        115                 120                 125
```

```
Tyr Tyr Ser Pro Asp Ser Val Glu Phe Trp Ala Phe Ser Phe Asp Glu
    130                 135                 140

Met Ala Lys Tyr Asp Leu Pro Ala Thr Ile Asp Phe Ile Leu Lys Lys
145                 150                 155                 160

Thr Gly Gln Asp Lys Leu His Tyr Val Gly His Ser Gln Gly Thr Thr
                165                 170                 175

Ile Gly Phe Ile Ala Phe Ser Thr Asn Pro Lys Leu Ala Lys Arg Ile
            180                 185                 190

Lys Thr Phe Tyr Ala Leu Ala Pro Val Ala Thr Val Lys Tyr Thr Glu
        195                 200                 205

Thr Leu Leu Asn Lys Leu Met Leu Val Pro Ser Phe Leu Phe Lys Leu
    210                 215                 220

Ile Phe Gly Asn Lys Ile Phe Tyr Pro His His Phe Phe Asp Gln Phe
225                 230                 235                 240

Leu Ala Thr Glu Val Cys Ser Arg Glu Thr Val Asp Leu Leu Cys Ser
                245                 250                 255

Asn Ala Leu Phe Ile Ile Cys Gly Phe Asp Thr Met Asn Leu Asn Met
            260                 265                 270

Ser Arg Leu Asp Val Tyr Leu Ser His Asn Pro Ala Gly Thr Ser Val
        275                 280                 285

Gln Asn Val Leu His Trp Ser Gln Ala Val Lys Ser Gly Lys Phe Gln
    290                 295                 300

Ala Phe Asp Trp Gly Ser Pro Val Gln Asn Met Met His Tyr His Gln
305                 310                 315                 320

Ser Met Pro Pro Tyr Tyr Asn Leu Thr Asp Met His Val Pro Ile Ala
                325                 330                 335

Val Trp Asn Gly Gly Asn Asp Leu Leu Ala Asp Pro His Asp Val Asp
            340                 345                 350

Leu Leu Leu Ser Lys Leu Pro Asn Leu Ile Tyr His Arg Lys Ile Pro
        355                 360                 365

Pro Tyr Asn His Leu Asp Phe Ile Trp Ala Met Asp Ala Pro Gln Ala
    370                 375                 380

Val Tyr Asn Glu Ile Val Ser Met Met Gly Thr Asp Asn Lys
385                 390                 395
```

<210> 97
<211> 371
<212> PRT
<213> Homo sapiens

<400> 97

```
Ser Pro Glu Val Thr Met Asn Ile Ser Gln Met Ile Thr Tyr Trp Gly
  1               5                  10                  15

Tyr Pro Asn Glu Glu Tyr Glu Val Val Thr Glu Asp Gly Tyr Ile Leu
             20                  25                  30

Glu Val Asn Arg Ile Pro Tyr Gly Lys Lys Asn Ser Gly Asn Thr Gly
         35                  40                  45

Gln Arg Pro Val Val Phe Leu Gln His Gly Leu Leu Ala Ser Ala Thr
     50                  55                  60

Asn Trp Ile Ser Asn Leu Pro Asn Asn Ser Leu Ala Phe Ile Leu Ala
 65                  70                  75                  80

Asp Ala Gly Tyr Asp Val Trp Leu Gly Asn Ser Arg Gly Asn Thr Trp
                 85                  90                  95

Ala Arg Arg Asn Leu Tyr Tyr Ser Pro Asp Ser Val Glu Phe Trp Ala
            100                 105                 110

Phe Ser Phe Asp Glu Met Ala Lys Tyr Asp Leu Pro Ala Thr Ile Asp
        115                 120                 125

Phe Ile Val Lys Lys Thr Gly Gln Lys Gln Leu His Tyr Val Gly His
    130                 135                 140

Ser Gln Gly Thr Thr Ile Gly Phe Ile Ala Phe Ser Thr Asn Pro Ser
145                 150                 155                 160

Leu Ala Lys Arg Ile Lys Thr Phe Tyr Ala Leu Ala Pro Val Ala Thr
                165                 170                 175

Val Lys Tyr Thr Lys Ser Leu Ile Asn Lys Leu Arg Phe Val Pro Gln
            180                 185                 190

Ser Leu Phe Lys Phe Ile Phe Gly Asp Lys Ile Phe Tyr Pro His Asn
        195                 200                 205

Phe Phe Asp Gln Phe Leu Ala Thr Glu Val Cys Ser Arg Glu Met Leu
    210                 215                 220

Asn Leu Leu Cys Ser Asn Ala Leu Phe Ile Ile Cys Gly Phe Asp Ser
225                 230                 235                 240

Lys Asn Phe Asn Thr Ser Arg Leu Asp Val Tyr Leu Ser His Asn Pro
                245                 250                 255

Ala Gly Thr Ser Val Gln Asn Met Phe His Trp Thr Gln Ala Val Lys
            260                 265                 270

Ser Gly Lys Phe Gln Ala Tyr Asp Trp Gly Ser Pro Val Gln Asn Arg
        275                 280                 285

Met His Tyr Asp Gln Ser Gln Pro Pro Tyr Tyr Asn Val Thr Ala Met
    290                 295                 300
```

```
Asn Val Pro Ile Ala Val Trp Asn Gly Gly Lys Asp Leu Leu Ala Asp
305                 310                 315                 320

Pro Gln Asp Val Gly Leu Leu Leu Pro Lys Leu Pro Asn Leu Ile Tyr
                325                 330                 335

His Lys Glu Ile Pro Phe Tyr Asn His Leu Asp Phe Ile Trp Ala Met
            340                 345                 350

Asp Ala Pro Gln Glu Val Tyr Asn Asp Ile Val Ser Met Ile Ser Glu
        355                 360                 365

Asp Lys Lys
    370


<210> 98
<211> 395
<212> PRT
<213> Rattus norvegicus

<400> 98
Met Trp Leu Leu Leu Ile Thr Ser Val Ile Ser Thr Phe Gly Gly Ala
  1               5                  10                  15

His Gly Leu Phe Gly Lys Leu Gly Pro Gly Asn Pro Glu Ala Asn Met
             20                  25                  30

Asn Ile Ser Gln Met Ile Thr Tyr Trp Gly Tyr Pro Cys Gln Glu Tyr
         35                  40                  45

Glu Val Val Thr Glu Asp Gly Tyr Ile Leu Gly Val Tyr Arg Ile Pro
     50                  55                  60

His Gly Lys Asn Asn Ser Glu Asn Ile Gly Lys Arg Pro Val Val Tyr
 65                  70                  75                  80

Leu Gln His Gly Leu Ile Ala Ser Ala Thr Asn Trp Ile Ala Asn Leu
                85                  90                  95

Pro Asn Asn Ser Leu Ala Phe Met Leu Ala Asp Ala Gly Tyr Asp Val
            100                 105                 110

Trp Leu Gly Asn Ser Arg Gly Asn Thr Trp Ser Arg Lys Asn Val Tyr
        115                 120                 125

Tyr Ser Pro Asp Ser Val Glu Phe Trp Ala Phe Ser Phe Asp Glu Met
    130                 135                 140

Ala Lys Tyr Asp Leu Pro Ala Thr Ile Asn Phe Ile Val Gln Lys Thr
145                 150                 155                 160

Gly Gln Glu Lys Ile His Tyr Val Gly His Ser Gln Gly Thr Thr Ile
                165                 170                 175

Gly Phe Ile Ala Phe Ser Thr Asn Pro Thr Leu Ala Lys Lys Ile Lys
```

```
            180                 185                 190

Thr Phe Tyr Ala Leu Ala Pro Val Ala Thr Val Lys Tyr Thr Gln Ser
        195                 200                 205

Pro Leu Lys Lys Ile Ser Phe Ile Pro Thr Phe Leu Phe Lys Leu Met
    210                 215                 220

Phe Gly Lys Lys Met Phe Leu Pro His Thr Tyr Phe Asp Asp Phe Leu
225                 230                 235                 240

Gly Thr Glu Val Cys Ser Arg Glu Val Leu Asp Leu Leu Cys Ser Asn
                245                 250                 255

Thr Leu Phe Ile Phe Cys Gly Phe Asp Lys Lys Asn Leu Asn Val Ser
            260                 265                 270

Arg Phe Asp Val Tyr Leu Gly His Asn Pro Ala Gly Thr Ser Val Gln
        275                 280                 285

Asp Phe Leu His Trp Ala Gln Leu Val Arg Ser Gly Lys Phe Gln Ala
    290                 295                 300

Phe Asn Trp Gly Ser Pro Ser Gln Asn Met Leu His Tyr Asn Gln Lys
305                 310                 315                 320

Thr Pro Pro Glu Tyr Asp Val Ser Ala Met Thr Val Pro Val Ala Val
                325                 330                 335

Trp Asn Gly Gly Asn Asp Ile Leu Ala Asp Pro Gln Asp Val Ala Met
            340                 345                 350

Leu Leu Pro Lys Leu Ser Asn Leu Leu Phe His Lys Glu Ile Leu Ala
        355                 360                 365

Tyr Asn His Leu Asp Phe Ile Trp Ala Met Asp Ala Pro Gln Glu Val
    370                 375                 380

Tyr Asn Glu Met Ile Ser Met Met Ala Glu Asp
385                 390                 395


<210> 99
<211> 200
<212> PRT
<213> Homo sapiens

<400> 99
Met Asp Ser Ser Thr Ala His Ser Pro Val Phe Leu Val Phe Pro Pro
  1               5                  10                  15

Glu Ile Thr Ala Ser Glu Tyr Glu Ser Thr Glu Leu Ser Ala Thr Thr
             20                  25                  30

Phe Ser Thr Gln Ser Pro Leu Gln Lys Leu Phe Ala Arg Lys Met Lys
         35                  40                  45
```

Ile Leu Gly Thr Ile Gln Ile Leu Phe Gly Ile Met Thr Phe Ser Phe
50 55 60

Gly Val Ile Phe Leu Phe Thr Leu Leu Lys Pro Tyr Pro Arg Phe Pro
65 70 75 80

Phe Ile Phe Leu Ser Gly Tyr Pro Phe Trp Gly Ser Val Leu Phe Ile
85 90 95

Asn Ser Gly Ala Phe Leu Ile Ala Val Lys Arg Lys Thr Thr Glu Thr
100 105 110

Leu Ile Ile Leu Ser Arg Ile Met Asn Phe Leu Ser Ala Leu Gly Ala
115 120 125

Ile Ala Gly Ile Ile Leu Leu Thr Phe Gly Phe Ile Leu Asp Gln Asn
130 135 140

Tyr Ile Cys Gly Tyr Ser His Gln Asn Ser Gln Cys Lys Ala Val Thr
145 150 155 160

Val Leu Phe Leu Gly Ile Leu Ile Thr Leu Met Thr Phe Ser Ile Ile
165 170 175

Glu Leu Phe Ile Ser Leu Pro Phe Ser Ile Leu Gly Cys His Ser Glu
180 185 190

Asp Cys Asp Cys Glu Gln Cys Cys
195 200

<210> 100
<211> 200
<212> PRT
<213> Homo sapiens

<400> 100
Met Asp Ser Ser Thr Ala His Ser Pro Val Phe Leu Val Phe Pro Pro
1 5 10 15

Glu Ile Thr Ala Ser Glu Tyr Glu Ser Thr Glu Leu Ser Ala Thr Thr
20 25 30

Phe Ser Thr Gln Ser Pro Leu Gln Lys Leu Phe Ala Arg Lys Met Lys
35 40 45

Ile Leu Gly Thr Ile Gln Ile Leu Phe Gly Ile Met Thr Phe Ser Phe
50 55 60

Gly Val Ile Phe Leu Phe Thr Leu Leu Lys Pro Tyr Pro Arg Phe Pro
65 70 75 80

Phe Ile Phe Leu Ser Gly Tyr Pro Phe Trp Gly Ser Val Leu Phe Ile
85 90 95

Asn Ser Gly Ala Phe Leu Ile Ala Val Lys Arg Lys Thr Thr Glu Thr
100 105 110

```
Leu Ile Ile Leu Ser Arg Ile Met Asn Phe Leu Ser Ala Leu Gly Ala
        115                 120                 125

Ile Ala Gly Ile Ile Leu Leu Thr Phe Gly Phe Ile Leu Asp Gln Asn
    130                 135                 140

Tyr Ile Cys Gly Tyr Ser His Gln Asn Ser Gln Cys Lys Ala Val Thr
145                 150                 155                 160

Val Leu Leu Leu Gly Ile Leu Ile Thr Leu Met Thr Phe Ser Ile Ile
                165                 170                 175

Glu Leu Phe Ile Ser Leu Pro Phe Ser Ile Leu Gly Cys His Ser Glu
            180                 185                 190

Asp Cys Asp Cys Glu Gln Cys Cys
        195                 200


<210> 101
<211> 239
<212> PRT
<213> Homo sapiens

<400> 101
Met His Gln Thr Tyr Ser Arg His Cys Arg Pro Glu Glu Ser Thr Phe
  1               5                  10                  15

Ser Ala Ala Met Thr Thr Met Gln Gly Met Glu Gln Ala Met Pro Gly
             20                  25                  30

Ala Gly Pro Gly Val Pro Gln Leu Gly Asn Met Ala Val Ile His Ser
         35                  40                  45

His Leu Trp Lys Gly Leu Gln Glu Lys Phe Leu Lys Gly Glu Pro Lys
     50                  55                  60

Val Leu Gly Val Val Gln Ile Leu Thr Ala Leu Met Ser Leu Ser Met
 65                  70                  75                  80

Gly Ile Thr Met Met Cys Met Ala Ser Asn Thr Tyr Gly Ser Asn Pro
                 85                  90                  95

Ile Ser Val Tyr Ile Gly Tyr Thr Ile Trp Gly Ser Val Met Phe Ile
            100                 105                 110

Ile Ser Gly Ser Leu Ser Ile Ala Ala Gly Ile Arg Thr Thr Lys Gly
        115                 120                 125

Leu Val Arg Gly Ser Leu Gly Met Asn Ile Thr Ser Ser Val Leu Ala
    130                 135                 140

Ala Ser Gly Ile Leu Ile Asn Thr Phe Ser Leu Ala Phe Tyr Ser Phe
145                 150                 155                 160

His His Pro Tyr Cys Asn Tyr Tyr Gly Asn Ser Asn Asn Cys His Gly
```

```
                165                 170                 175

Thr Met Ser Ile Leu Met Gly Leu Asp Gly Met Val Leu Leu Leu Ser
            180                 185                 190

Val Leu Glu Phe Arg Ile Ala Val Ser Leu Ser Ala Phe Gly Cys Lys
        195                 200                 205

Val Leu Cys Cys Thr Pro Gly Gly Val Val Leu Ile Leu Pro Ser His
    210                 215                 220

Ser His Met Ala Glu Thr Ala Ser Pro Thr Pro Leu Asn Glu Val
225                 230                 235


<210> 102
<211> 239
<212> PRT
<213> Homo sapiens

<400> 102
Met His Gln Thr Tyr Ser Arg His Cys Arg Pro Glu Glu Ser Thr Phe
  1               5                  10                  15

Ser Ala Ala Met Thr Thr Met Gln Gly Met Glu Gln Ala Met Pro Gly
             20                  25                  30

Ala Gly Pro Gly Val Pro Gln Leu Gly Asn Met Ala Val Ile His Ser
         35                  40                  45

His Leu Trp Lys Gly Leu Gln Glu Lys Phe Leu Lys Gly Glu Pro Lys
     50                  55                  60

Val Leu Gly Val Val Gln Ile Leu Thr Ala Leu Met Ser Leu Ser Met
 65                  70                  75                  80

Gly Ile Thr Met Met Cys Met Ala Ser Asn Thr Tyr Gly Ser Asn Pro
                 85                  90                  95

Ile Ser Val Tyr Ile Gly Tyr Thr Ile Trp Gly Ser Val Met Phe Ile
            100                 105                 110

Ile Ser Gly Ser Leu Ser Ile Ala Ala Gly Ile Arg Thr Thr Lys Gly
        115                 120                 125

Leu Val Arg Gly Ser Leu Gly Met Asn Ile Thr Ser Ser Val Leu Ala
    130                 135                 140

Ala Ser Gly Ile Leu Ile Asn Thr Phe Ser Leu Ala Phe Tyr Ser Phe
145                 150                 155                 160

His His Pro Tyr Cys Asn Tyr Tyr Gly Asn Ser Asn Asn Cys His Gly
                165                 170                 175

Thr Met Ser Ile Leu Met Gly Leu Asp Gly Met Val Leu Leu Leu Ser
            180                 185                 190
```

```
Val Leu Glu Phe Cys Ile Ala Val Ser Leu Ser Ala Phe Gly Cys Lys
        195                 200                 205

Val Leu Cys Cys Thr Pro Gly Gly Val Val Leu Ile Leu Pro Ser His
    210                 215                 220

Ser His Met Ala Glu Thr Ala Ser Pro Thr Pro Leu Asn Glu Val
225                 230                 235


<210> 103
<211> 220
<212> PRT
<213> Homo sapiens

<400> 103
Met Thr Thr Met Gln Gly Met Glu Gln Ala Met Pro Gly Ala Gly Pro
  1               5                  10                  15

Gly Val Pro Gln Leu Gly Asn Met Ala Val Ile His Ser His Leu Trp
             20                  25                  30

Lys Gly Leu Gln Glu Lys Phe Leu Lys Gly Glu Pro Lys Val Leu Gly
         35                  40                  45

Val Val Gln Ile Leu Thr Ala Leu Met Ser Leu Ser Met Gly Ile Thr
     50                  55                  60

Met Met Cys Met Ala Ser Asn Thr Tyr Gly Ser Asn Pro Ile Ser Val
 65                  70                  75                  80

Tyr Ile Gly Tyr Thr Ile Trp Gly Ser Val Met Phe Ile Ile Ser Gly
                 85                  90                  95

Ser Leu Ser Ile Ala Ala Gly Ile Arg Thr Thr Lys Gly Leu Val Arg
            100                 105                 110

Gly Ser Leu Gly Met Asn Ile Thr Ser Ser Val Leu Ala Ala Ser Gly
        115                 120                 125

Ile Leu Ile Asn Thr Phe Ser Leu Ala Phe Tyr Ser Phe His His Pro
    130                 135                 140

Tyr Cys Asn Tyr Tyr Gly Asn Ser Asn Asn Cys His Gly Thr Met Ser
145                 150                 155                 160

Ile Leu Met Gly Leu Asp Gly Met Val Leu Leu Leu Ser Val Leu Glu
                165                 170                 175

Phe Arg Ile Ala Val Ser Leu Ser Ala Phe Gly Cys Lys Val Leu Cys
            180                 185                 190

Cys Thr Pro Gly Gly Val Val Leu Ile Leu Pro Ser His Ser His Met
        195                 200                 205

Ala Glu Thr Ala Ser Pro Thr Pro Leu Asn Glu Val
    210                 215                 220
```

<210> 104
<211> 434
<212> PRT
<213> Mus musculus

<400> 104
Met Ala Val Phe Pro Trp His Ser Arg Asn Arg Asn Tyr Lys Ala Glu
1 5 10 15

Leu Ala Ser Cys Arg Leu Glu Thr Val Pro Leu Glu Cys Gly Asp Tyr
20 25 30

His Pro Leu Lys Pro Ile Thr Val Thr Glu Ser Lys Thr Lys Lys Val
35 40 45

Ser Arg Lys Gly Ser Thr Ser Ser Thr Ser Ser Ser Ser Ser Ser Ser
50 55 60

Val Ile Asp Pro Leu Ser Ser Val Leu Asp Gly Thr Asp Pro Leu Ser
65 70 75 80

Met Phe Ala Ala Thr Ser Asp Pro Ala Ala Thr Gly Thr Val Thr Asp
85 90 95

Ser Ser Arg Lys Lys Arg Asp Lys Asp Glu Asn Ser Phe Val Gly Pro
100 105 110

Asp Phe Glu Pro Trp Ala Asn Lys Arg Val Glu Ile Leu Ala Arg Tyr
115 120 125

Thr Thr Thr Glu Lys Leu Ser Ile Asn Leu Phe Met Gly Ser Glu Lys
130 135 140

Gly Arg Gly Gly Ala Ala Ala Ser Ala Met Ser Glu Lys Val Arg Thr
145 150 155 160

Arg Leu Glu Glu Leu Asp Asp Phe Glu Glu Gly Ser Gln Lys Glu Leu
165 170 175

Leu Asn Leu Thr Gln Gln Asp Tyr Val Asn Arg Ile Glu Glu Leu Asn
180 185 190

Gln Ser Leu Lys Asp Ala Trp Ala Ser Asp Gln Lys Val Lys Ala Leu
195 200 205

Lys Ile Val Ile Gln Cys Ser Lys Leu Leu Ser Asp Thr Ser Val Ile
210 215 220

Gln Phe Tyr Pro Ser Lys Phe Val Leu Ile Thr Asp Ile Leu Asp Thr
225 230 235 240

Phe Gly Lys Leu Val Tyr Glu Arg Ile Ser Ser Met Cys Val Asp Ser
245 250 255

Arg Ser Ala Leu Pro Asp His Phe Ser Pro Glu Asn Val Asn Asp Thr

```
            260                 265                 270

Ala Lys Glu Thr Cys Leu Asn Trp Phe Phe Lys Ile Ala Ser Ile Arg
        275                 280                 285

Glu Leu Ile Pro Arg Phe Tyr Val Glu Ala Ser Ile Leu Lys Cys Asn
    290                 295                 300

Lys Phe Leu Ser Lys Thr Gly Ile Ser Glu Cys Leu Pro Arg Leu Thr
305                 310                 315                 320

Cys Met Ile Arg Gly Ile Gly Asp Pro Leu Val Ser Val Tyr Ala Arg
                325                 330                 335

Ala Tyr Leu Cys Arg Val Gly Ile Glu Val Ala Pro His Leu Lys Glu
            340                 345                 350

Ser Leu Asn Lys Asn Phe Phe Asp Phe Leu Leu Thr Phe Lys Gln Ile
        355                 360                 365

His Gly Asp Thr Val Gln Asn Gln Leu Val Ala Gln Gly Val Glu Leu
    370                 375                 380

Leu Ser Tyr Leu Pro Leu Tyr Ser Pro Ala Met Gly Trp Ile Phe Gln
385                 390                 395                 400

Cys Val Ser Tyr His Ala Pro Glu Cys Ala Leu Ser Ser Leu Pro Ser
                405                 410                 415

Leu Leu Ser Glu Leu Arg Gly Leu Ser His Leu Trp Arg Cys Ala Glu
            420                 425                 430

Ala Val
```

<210> 105
<211> 824
<212> PRT
<213> Homo sapiens

<400> 105

```
Met Gly Ser Glu Lys Gly Lys Ala Gly Thr Ala Thr Leu Ala Met Ser
  1               5                  10                  15

Glu Lys Val Arg Thr Arg Leu Glu Glu Leu Asp Asp Phe Glu Glu Gly
             20                  25                  30

Ser Gln Lys Glu Leu Leu Asn Leu Thr Gln Gln Asp Tyr Val Asn Arg
         35                  40                  45

Ile Glu Glu Leu Asn Gln Ser Leu Lys Asp Ala Trp Ala Ser Asp Gln
     50                  55                  60

Lys Val Lys Ala Leu Lys Ile Val Ile Gln Cys Ser Lys Leu Leu Ser
 65                  70                  75                  80
```

Asp Thr Ser Val Ile Gln Phe Tyr Pro Ser Lys Phe Val Leu Ile Thr
85 90 95

Asp Ile Leu Asp Thr Phe Gly Lys Leu Val Tyr Glu Arg Ile Phe Ser
100 105 110

Met Cys Val Asp Ser Arg Ser Val Leu Pro Asp His Phe Ser Pro Glu
115 120 125

Asn Ala Asn Asp Thr Ala Lys Glu Thr Cys Leu Asn Trp Phe Phe Lys
130 135 140

Ile Ala Ser Ile Arg Glu Leu Ile Pro Arg Phe Tyr Val Glu Ala Ser
145 150 155 160

Ile Leu Lys Cys Asn Lys Phe Leu Ser Lys Thr Gly Ile Ser Glu Cys
165 170 175

Leu Pro Arg Leu Thr Cys Met Ile Arg Gly Ile Gly Asp Pro Leu Val
180 185 190

Ser Val Tyr Ala Arg Ala Tyr Leu Cys Arg Val Gly Met Glu Val Ala
195 200 205

Pro His Leu Lys Glu Thr Leu Asn Lys Asn Phe Phe Asp Phe Leu Leu
210 215 220

Thr Phe Lys Gln Ile His Gly Asp Thr Val Gln Asn Gln Leu Val Val
225 230 235 240

Gln Gly Val Glu Leu Pro Ser Tyr Leu Pro Leu Tyr Pro Pro Ala Met
245 250 255

Asp Trp Ile Phe Gln Cys Ile Ser Tyr His Ala Pro Glu Ala Leu Leu
260 265 270

Thr Glu Met Met Glu Arg Cys Lys Lys Leu Gly Asn Asn Ala Leu Leu
275 280 285

Leu Asn Ser Val Met Ser Ala Phe Arg Ala Glu Phe Ile Ala Thr Arg
290 295 300

Ser Met Asp Phe Ile Gly Met Ile Lys Glu Cys Asp Glu Ser Gly Phe
305 310 315 320

Pro Lys His Leu Leu Phe Arg Ser Leu Gly Leu Asn Leu Ala Leu Ala
325 330 335

Asp Pro Pro Glu Ser Asp Arg Leu Gln Ile Leu Asn Glu Ala Trp Lys
340 345 350

Val Ile Thr Lys Leu Lys Asn Pro Gln Asp Tyr Ile Asn Cys Ala Glu
355 360 365

Val Trp Val Glu Tyr Thr Cys Lys His Phe Thr Lys Arg Glu Val Asn
370 375 380

```
Thr Val Leu Ala Asp Val Ile Lys His Met Thr Pro Asp Arg Ala Phe
385                 390                 395                 400

Glu Asp Ser Tyr Pro Gln Leu Gln Leu Ile Ile Lys Lys Val Ile Ala
                405                 410                 415

His Phe His Asp Phe Ser Val Leu Phe Ser Val Glu Lys Phe Leu Pro
            420                 425                 430

Phe Leu Asp Met Phe Gln Lys Glu Ser Val Arg Val Glu Val Cys Lys
        435                 440                 445

Cys Ile Met Asp Ala Phe Ile Lys His Gln Gln Glu Pro Thr Lys Asp
    450                 455                 460

Pro Val Ile Leu Asn Ala Leu Leu His Val Cys Lys Thr Met His Asp
465                 470                 475                 480

Ser Val Asn Ala Leu Thr Leu Glu Asp Glu Lys Arg Met Leu Ser Tyr
                485                 490                 495

Leu Ile Asn Gly Phe Ile Lys Met Val Ser Phe Gly Arg Asp Phe Glu
            500                 505                 510

Gln Gln Leu Ser Phe Tyr Val Glu Ser Arg Ser Met Phe Cys Asn Leu
        515                 520                 525

Glu Pro Val Leu Val Gln Leu Ile His Ser Val Asn Arg Leu Ala Met
    530                 535                 540

Glu Thr Arg Lys Val Met Lys Gly Asn His Ser Arg Lys Thr Ala Ala
545                 550                 555                 560

Phe Val Arg Ala Cys Val Ala Tyr Cys Phe Ile Thr Ile Pro Ser Leu
                565                 570                 575

Ala Gly Ile Phe Thr Arg Leu Asn Leu Tyr Leu His Ser Gly Gln Val
            580                 585                 590

Ala Leu Ala Asn Gln Cys Leu Ser Gln Ala Asp Ala Phe Phe Lys Ala
        595                 600                 605

Ala Ile Ser Leu Val Pro Glu Val Pro Lys Met Ile Asn Ile Asp Gly
    610                 615                 620

Lys Met Arg Pro Ser Glu Ser Phe Leu Leu Glu Phe Leu Cys Asn Phe
625                 630                 635                 640

Phe Ser Thr Leu Leu Ile Val Pro Asp His Pro Glu His Gly Val Leu
                645                 650                 655

Phe Leu Val Arg Glu Leu Leu Asn Val Ile Gln Asp Tyr Thr Trp Glu
            660                 665                 670

Asp Asn Ser Asp Glu Lys Ile Arg Ile Tyr Thr Cys Val Leu His Leu
        675                 680                 685
```

```
Leu Ser Ala Met Ser Gln Glu Thr Tyr Leu Tyr His Ile Asp Lys Val
    690                 695                 700

Asp Ser Asn Asp Ser Leu Tyr Gly Gly Asp Ser Lys Phe Leu Ala Glu
705                 710                 715                 720

Asn Asn Lys Leu Cys Glu Thr Val Met Ala Gln Ile Leu Glu His Leu
                725                 730                 735

Lys Thr Leu Ala Lys Asp Glu Ala Leu Lys Arg Gln Ser Ser Leu Gly
            740                 745                 750

Leu Ser Phe Phe Asn Ser Ile Leu Ala His Gly Asp Leu Arg Asn Asn
        755                 760                 765

Lys Leu Asn Gln Leu Ser Val Asn Leu Trp His Leu Ala Gln Arg His
    770                 775                 780

Gly Cys Ala Asp Thr Arg Thr Met Val Lys Thr Leu Glu Tyr Ile Lys
785                 790                 795                 800

Lys Gln Ser Lys Gln Pro Asp Met Thr His Leu Thr Glu Leu Ala Leu
                805                 810                 815

Arg Leu Pro Leu Gln Thr Arg Thr
            820
```

<210> 106
<211> 241
<212> PRT
<213> Mus musculus

<400> 106

```
Met Ala Val Phe Pro Trp Asn Tyr Lys Ala Asp Val Ala Ser Cys Arg
  1               5                  10                  15

Leu Glu Thr Val Pro Leu Glu Cys Gly Asp Tyr His Pro Leu Lys Pro
             20                  25                  30

Ile Thr Val Thr Glu Ser Lys Thr Lys Lys Val Ser Arg Lys Gly Ser
         35                  40                  45

Thr Ser Ser Thr Ser Ser Ser Ser Ser Ser Ser Val Ile Asp Pro Leu
     50                  55                  60

Ser Ser Val Leu Asp Gly Thr Asp Pro Leu Ser Met Phe Ala Ala Thr
 65                  70                  75                  80

Ser Asp Pro Ala Ala Thr Gly Thr Val Thr Asp Ser Ser Arg Lys Lys
                 85                  90                  95

Arg Asp Lys Asp Glu Asn Ser Phe Val Gly Pro Asp Phe Glu Pro Trp
            100                 105                 110

Ala Asn Lys Arg Val Glu Ile Leu Ala Arg Tyr Thr Thr Thr Glu Lys
        115                 120                 125
```

```
Leu Ser Ile Asn Leu Phe Met Gly Ser Glu Lys Gly Arg Gly Gly Ala
    130                 135                 140

Ala Ala Ser Ala Met Ser Glu Lys Val Arg Thr Arg Leu Glu Glu Leu
145                 150                 155                 160

Asp Asp Phe Glu Glu Gly Ser Gln Lys Glu Leu Leu Asn Leu Thr Gln
                165                 170                 175

Gln Asp Tyr Val Asn Arg Ile Glu Glu Leu Asn Gln Ser Leu Lys Asp
            180                 185                 190

Ala Trp Ala Ser Asp Gln Lys Val Lys Ala Leu Lys Ile Val Ile Gln
        195                 200                 205

Cys Ser Lys Leu Leu Ser Asp Thr Ser Val Ile Gln Phe Tyr Pro Ser
    210                 215                 220

Lys Phe Val Leu Ile Thr Asp Ile Leu Asp Thr Phe Gly Asn Val Pro
225                 230                 235                 240

Ser
```

<210> 107
<211> 942
<212> PRT
<213> Drosophila melanogaster

<400> 107

```
Met Ala Asn Leu Glu Trp Val Cys Val Pro Arg Cys Tyr Glu Val Arg
  1               5                  10                  15

Lys Asn Cys Leu Thr Gly Gln Ala Thr Leu Glu His Pro Leu Lys Gln
             20                  25                  30

Arg Thr Val Thr Val Val Asp Ser Asn Pro Leu Ser Arg Ala Leu Glu
         35                  40                  45

Gly Thr Asp Pro Leu Ser Gln Phe Ala Arg Gln Asp Asp Glu Leu Asn
     50                  55                  60

Asp Pro Leu Ser Gln Met Val Ser Glu Phe Asp Leu Lys Ser Lys Arg
 65                  70                  75                  80

Arg Glu Arg Asp Arg Thr Glu Pro Glu Asp Asn Thr Leu Gln Trp Ser
                 85                  90                  95

Ser Arg Arg Leu Gly Ile Leu Asn Arg Phe Thr Thr Asn Glu Lys Leu
            100                 105                 110

Ser Leu Ser Thr Ser Phe Leu Val Ser Ser Gly Ser Leu Asp Gly Gly
        115                 120                 125

Asn Glu Ser Ile Lys Ala Gln Thr Val Val Ala Asp Lys Thr Lys Phe
```

```
    130                 135                 140

Arg Leu Glu Gln Leu Asp His Phe Asp Asp Gly Ser Met Arg His Met
145                 150                 155                 160

Met Asp Leu Thr Gln Gln Glu Tyr Ile Gln Arg Phe Glu Gln Leu Lys
                165                 170                 175

Gln Glu Leu Ile Gln Ser Trp His Asn Asp Gln Arg Val Lys Ala Leu
            180                 185                 190

Lys Ile Ala Ile Gln Cys Ala Lys Met Leu Ala Asp Thr Thr Val Leu
        195                 200                 205

Gln Phe Tyr Pro Ser Gln Tyr Val Leu Ile Thr Asp Ile Leu Asp Val
    210                 215                 220

Phe Gly Lys Leu Val Tyr Glu Arg Leu Arg Ala Lys Ala Ser Gly Asp
225                 230                 235                 240

Pro Ala Ala Ser Ala Ala Thr Leu Glu Arg Glu Arg Glu Ala Ala Arg
                245                 250                 255

Asp Thr Cys Gln Asn Trp Phe Tyr Lys Ile Ala Ser Ile Arg Glu Leu
            260                 265                 270

Leu Pro Arg Phe Tyr Leu Glu Leu Ser Ile Phe Lys Cys Tyr Glu Phe
        275                 280                 285

Leu Ser Ser Ser Arg Glu Glu Tyr Glu Arg Ile Leu Gln Arg Leu Thr
    290                 295                 300

His Gln Leu Arg Gly Ile Ala Asp Pro Leu Val Ser Ser Tyr Ala Arg
305                 310                 315                 320

Cys Tyr Leu Val Arg Met Gly Val Thr Leu Thr Ser Ser Lys Thr Tyr
                325                 330                 335

Ile Arg Glu Asn Phe Ala Asp Leu Phe Leu Ile Tyr Pro Gln Ile Phe
            340                 345                 350

Arg Phe Val Ala Arg Phe Asn Leu His Pro Glu Ile Val Thr Ala Ser
        355                 360                 365

Ser Tyr Leu Gln Leu Tyr Ala Pro Ala Phe Asp Tyr Met Leu Leu Cys
    370                 375                 380

Leu Val His Lys Ser Glu Leu His Thr Gln Asp Ile Leu Asn Glu Cys
385                 390                 395                 400

Lys Gln Leu Lys Asn Asn Gly Ala Ile Leu Met Ser Val Leu Ser Ser
                405                 410                 415

Phe Asn Ser Glu Phe Ile Ala Thr Asn Ala Leu Glu Phe Ile Ala Leu
            420                 425                 430

Ile Asn Ala Ser Glu Thr Pro Gly Ile Ser Lys Ser Gln Leu Leu Arg
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        435                 440                 445

Ser Leu Gly Ser Cys Val Ser Ser Cys Pro Pro Leu Gln Glu Gln Arg
    450                 455                 460

Val Thr Phe Leu Lys Ala Ala Phe Glu Thr Ile Asn Lys Leu Thr Asp
465                 470                 475                 480

Pro Asn Glu Tyr Ile Asn Cys Val Glu Thr Trp Ala Val Phe Val Ser
                485                 490                 495

Gln Tyr Phe Thr Ile His Glu Val Asn Arg Leu Leu Gly Glu Leu Asn
            500                 505                 510

Thr Arg Met Cys Leu Gly Lys Ala Tyr Glu Lys His Tyr Ser Gln Leu
        515                 520                 525

Gln Asn Ile Leu Thr Arg Ile Met Gln Asn Tyr Arg Ser Ile Glu Leu
    530                 535                 540

Leu Leu Ile Gln Pro Asn Phe Leu Pro Tyr Leu Asp Leu Phe Gln Lys
545                 550                 555                 560

Glu Ser Val Arg Val Glu Val Cys Lys Asn Ile Leu Ser Phe Tyr Lys
                565                 570                 575

Gln Asn Ser Asp Glu Tyr Thr Cys Asp Ala Val Val Thr Asn Ala Leu
            580                 585                 590

Met Tyr Leu Gly Lys Ile Leu Asn Asp Ser Val Asn Ala Leu Ser Val
        595                 600                 605

Asp Asp Glu Arg Arg Gln Ile Ala Gln Leu Ile Asn Val Phe Ile His
    610                 615                 620

Lys Val His Phe Gly Asn Asp Leu Glu Gln Gln Leu Ser Phe Tyr Val
625                 630                 635                 640

Glu Ala Arg Gly Thr Phe Ser Asn Leu Asp Ala Val Tyr Val Thr Leu
                645                 650                 655

Val His Ala Ala Cys Lys Leu Ala Thr Arg Asn Arg Ser Lys Ser Thr
            660                 665                 670

Gly Phe Val Lys Ala Cys Ile Ala Tyr Cys Phe Ile Thr Ile Pro Ser
        675                 680                 685

Ile Glu Ala Val Gln Gln Gln Met Asn Leu Tyr Leu Leu Cys Gly Gln
    690                 695                 700

Leu Ala Leu Gln His Leu Cys Leu Gly Gln Ala Asp Ala Cys Phe Glu
705                 710                 715                 720

Ala Ala Leu Gln Leu Val Asn Glu Leu Pro Ala Ala Thr Val Asp Phe
                725                 730                 735

Asp Gly Lys Pro Arg Ser Leu Glu Pro Phe Leu Val Ser Tyr Met Cys
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740 745 750

Asn Ile Leu Ala Thr Leu Ile Val Val Pro Asp Ser Pro Glu Gln Gly
755 760 765

Val Leu Tyr Phe Leu Arg Leu Leu Leu Glu Val Val Gly Arg His Lys
770 775 780

Phe Lys Val Asp Ser Ser Ala Pro Ser Ile Ile Tyr Leu His Ser Leu
785 790 795 800

Asp Met Leu Tyr Val Gln Ser Leu Glu Arg Phe Pro Tyr His Ile Lys
805 810 815

Gly Val Val Ser Asn Asp Asp Leu Tyr Gly His Asp Pro Lys Phe Leu
820 825 830

Gln Glu Val Asn Asn Met Cys Ala Gln Val Val Asp Ala Ile Leu Leu
835 840 845

Gln Leu Lys Ser Leu Gly Val Ala Gln Gln Gln Arg Ser Gln Ala Glu
850 855 860

Leu Ala Leu Glu Leu Phe Leu Arg Ile Val Lys Tyr Ala Asp Leu Glu
865 870 875 880

Arg Glu Thr Ile Ala Gln Leu Ala Val Asn Leu Trp Leu Leu Ala Asn
885 890 895

Lys Ala Gln Ser Gln Leu Asp Val Lys Thr Leu Pro Gln Thr Leu Arg
900 905 910

Ser Val Glu Ile Ile Tyr Lys Gln Ile Lys Asp Ala Ser Pro Ile Arg
915 920 925

Ala Gln Thr Ile Ala Lys Leu Leu Leu Arg Val Arg Ser Ser
930 935 940

<210> 108
<211> 826
<212> PRT
<213> Drosophila melanogaster

<400> 108
Met Ala Asp Ala Tyr Cys Leu Thr Asn Phe Ile Asp Phe Ser Leu Ser
1 5 10 15

Leu Ser Leu Pro Leu Lys His His Asn Arg Ile Lys Tyr Thr Cys Phe
20 25 30

Asp Ile Ser Asp Ser Tyr Ile Ile Phe Gly Ala Ser Ser Gly Ser Leu
35 40 45

Tyr Leu Phe Asn Arg Asn Gly Lys Phe Leu Leu Leu Ile Pro Asn Lys
50 55 60

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His Gly Ala Ile Thr Ser Leu Ser Ile Ser Ala Asn Ser Lys Tyr Val
 65                  70                  75                  80

Ala Phe Ala Thr Gln Arg Ser Leu Ile Cys Val Tyr Ala Val Asn Leu
                 85                  90                  95

Ser Ala Gln Ala Thr Pro Gln Val Ile Phe Thr His Leu Asp Gln Ser
            100                 105                 110

Val Gln Val Thr Cys Ile His Trp Thr Gln Asp Glu Lys Gln Phe Tyr
        115                 120                 125

Tyr Gly Asp Ser Arg Gly Gln Val Ser Leu Val Leu Leu Ser Ser Phe
    130                 135                 140

Ile Gly His Ser Leu Leu Phe Asn Met Thr Val His Pro Leu Leu Tyr
145                 150                 155                 160

Leu Asp Ser Pro Ile Val Gln Ile Asp Asp Phe Glu Tyr Leu Leu Leu
                165                 170                 175

Val Ser Asn Cys Thr Lys Cys Ile Leu Cys Asn Thr Glu Tyr Glu Asp
            180                 185                 190

Tyr Lys Gln Ile Gly Asn Arg Pro Arg Asp Gly Ala Phe Gly Ala Cys
        195                 200                 205

Phe Phe Val Ser Pro Gln Glu Ser Leu Gln Pro Ser Arg Ile Tyr Cys
    210                 215                 220

Ala Arg Pro Gly Ser Arg Val Trp Glu Val Asp Phe Glu Gly Glu Val
225                 230                 235                 240

Ile Gln Thr His Gln Phe Lys Thr Ala Leu Ala Thr Ala Pro Ala Arg
                245                 250                 255

Ile Gln Arg Pro Gly Ser Gly Thr Asp Glu Leu Asp Ala Asn Ala Glu
            260                 265                 270

Leu Leu Asp Tyr Gln Pro Gln Asn Leu Gln Phe Ala Lys Val Gln Arg
        275                 280                 285

Leu Asn Asp Asp Phe Leu Leu Ala Phe Thr Glu Leu Gly Leu Tyr Ile
    290                 295                 300

Phe Asp Ile Arg Arg Ser Ala Val Val Leu Trp Ser Asn Gln Phe Glu
305                 310                 315                 320

Arg Ile Ala Asp Cys Arg Ser Ser Gly Ser Glu Ile Phe Val Phe Thr
                325                 330                 335

Gln Ser Gly Ala Leu Tyr Ser Val Gln Leu Gln Thr Leu Gln Ser His
            340                 345                 350

Ala Val Ser Leu Ile Gln Gln Ser Lys Leu Leu Pro Cys Ala Asn Leu
        355                 360                 365
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Leu Arg Gln His Val Arg Tyr Phe Ala Asp Lys Ala Arg Glu Asp Tyr
370 375 380

Glu Leu Lys Gln Leu Asn Pro Leu Lys Gln Leu Leu Ile Glu Arg Gln
385 390 395 400

Glu Tyr Glu Leu Leu Asn Asp Ile Ser Val Ile Phe Asp Ala Ile Thr
405 410 415

Gln Cys Thr Gly Ser Ala Leu Asp Thr His Ser Ser Gly Gly Ser Ser
420 425 430

Ala Thr Thr Glu Arg Ser Leu Ser Gly Gly Ser Ser Ser Arg Ala Pro
435 440 445

Pro Lys Gly Val Tyr Val Leu Glu Asn Ala Phe Cys Asp Asn Leu Lys
450 455 460

Gln Pro Leu Lys Thr Gly His Phe Lys Asp Ala Leu Leu Thr Val Thr
465 470 475 480

Gly Lys Phe Gly Lys Asn Ile Ile Lys Tyr Lys Phe Asn Ile Phe Ala
485 490 495

Glu Glu Gln Gln Gln Leu Val Arg Glu Leu Ile Pro Ala Ser Glu Arg
500 505 510

Ser Leu Pro Phe Lys Asp Ile Lys Ala Arg Tyr Glu Ser Gly Ser Glu
515 520 525

Asp Gln Glu Glu Glu Ile Val Arg Arg Cys Lys Lys Pro Ala Pro Gln
530 535 540

Val Pro His Ile Ser Pro Glu Glu Lys Thr Leu Tyr Asn Leu Tyr Leu
545 550 555 560

Ile Ala Lys Ser Ala Lys Phe Ser Arg Thr Gln Cys Val Asp Arg Tyr
565 570 575

Arg Ala Val Phe Asp Glu Tyr Ala Ala Gly Glu Leu Val Asn Leu Leu
580 585 590

Glu Lys Leu Ala Gln Val Met Val Glu His Gly Asp Thr Pro Asp Gln
595 600 605

Ala Gln Arg Asn Cys Tyr Glu Met Tyr Phe Asp Tyr Leu Asp Pro Glu
610 615 620

Met Ile Trp Glu Val Asp Asp Ala Thr Arg Asp His Ile Ala Ala Gly
625 630 635 640

Phe Val Leu Leu Asn Thr Ser Gln Asn Ala Glu Ile Val Lys Cys Glu
645 650 655

His Cys Ser Phe Pro Leu Arg Phe Asp Thr Ser Cys Gln Tyr His Glu
660 665 670

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Leu Gly Ala Val Leu Leu Arg Tyr Phe Trp Ser Arg Gly Glu Gln Leu
        675                 680                 685

Lys Cys Phe Asp Val Val Gln Ser Val Pro Ala Leu Leu Asp Val Leu
    690                 695                 700

Ala Lys Phe Tyr Leu Ala Glu Gln Asn Leu Thr Lys Val Val Ala Ile
705                 710                 715                 720

Val Leu Asn Tyr Gly Leu Pro Glu Leu Leu Ala Asp Val Gly Lys Gln
                725                 730                 735

Leu Ser Val Ser Ala Trp Gly Arg Cys Phe Glu Gln Phe Val Glu Leu
            740                 745                 750

Gln Arg Gly Gly Arg Leu Val Cys Ala Asn Cys Glu Cys Ile Ser Gly
        755                 760                 765

Val Glu Gln Glu Gln Leu Gly Arg His Phe Phe Tyr Asn Trp Asn Cys
    770                 775                 780

Phe Leu Asn Ile Ala Leu Asp His Met Ser Ala Gly Asp Thr Leu Ala
785                 790                 795                 800

Leu Ile Phe Lys Trp Ser Ser Tyr Ile Pro Asn Asp Ala Ile Asp Arg
                805                 810                 815

Glu Phe Tyr Ser Arg Cys Leu Leu Lys Gly
            820                 825


<210> 109
<211> 30
<212> PRT
<213> Homo sapiens

<400> 109
Glu Arg Ser Leu Trp Gly Ser Trp Leu Pro Cys Lys Ser Thr Thr Ala
  1               5                  10                  15

Leu Arg Pro Pro Cys Cys Glu Glu Ala Gln Ala Thr His Val
             20                  25                  30


<210> 110
<211> 442
<212> PRT
<213> Homo sapiens

<400> 110
Met Ala Ser Val Val Leu Pro Ser Gly Ser Gln Cys Ala Ala Ala Ala
  1               5                  10                  15

Ala Ala Ala Ala Pro Pro Gly Leu Arg Leu Arg Leu Leu Leu Leu Leu
             20                  25                  30

Phe Ser Ala Ala Ala Leu Ile Pro Thr Gly Asp Gly Gln Asn Leu Phe
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          35                  40                  45

Thr Lys Asp Val Thr Val Ile Glu Gly Glu Val Ala Thr Ile Ser Cys
     50                  55                  60

Gln Val Asn Lys Ser Asp Asp Ser Val Ile Gln Leu Leu Asn Pro Asn
 65                  70                  75                  80

Arg Gln Thr Ile Tyr Phe Arg Asp Phe Arg Pro Leu Lys Asp Ser Arg
                 85                  90                  95

Phe Gln Leu Leu Asn Phe Ser Ser Ser Glu Leu Lys Val Ser Leu Thr
            100                 105                 110

Asn Val Ser Ile Ser Asp Glu Gly Arg Tyr Phe Cys Gln Leu Tyr Thr
        115                 120                 125

Asp Pro Pro Gln Glu Ser Tyr Thr Thr Ile Thr Val Leu Val Pro Pro
    130                 135                 140

Arg Asn Leu Met Ile Asp Ile Gln Arg Asp Thr Ala Val Glu Gly Glu
145                 150                 155                 160

Glu Ile Glu Val Asn Cys Thr Ala Met Ala Ser Lys Pro Ala Thr Thr
                165                 170                 175

Ile Arg Trp Phe Lys Gly Asn Thr Glu Leu Lys Gly Lys Ser Glu Val
            180                 185                 190

Glu Glu Trp Ser Asp Met Tyr Thr Val Thr Ser Gln Leu Met Leu Lys
        195                 200                 205

Val His Lys Glu Asp Asp Gly Val Pro Val Ile Cys Gln Val Glu His
    210                 215                 220

Pro Ala Val Thr Gly Asn Leu Gln Thr Gln Arg Tyr Leu Glu Val Gln
225                 230                 235                 240

Tyr Lys Pro Gln Val His Ile Gln Met Thr Tyr Pro Leu Gln Gly Leu
                245                 250                 255

Thr Arg Glu Gly Asp Ala Leu Glu Leu Thr Cys Glu Ala Ile Gly Lys
            260                 265                 270

Pro Gln Pro Val Met Val Thr Trp Val Arg Val Asp Asp Glu Met Pro
        275                 280                 285

Gln His Ala Val Leu Ser Gly Pro Asn Leu Phe Ile Asn Asn Leu Asn
    290                 295                 300

Lys Thr Asp Asn Gly Thr Tyr Arg Cys Glu Ala Ser Asn Ile Val Gly
305                 310                 315                 320

Lys Ala His Ser Asp Tyr Met Leu Tyr Val Tyr Asp Pro Pro Thr Thr
                325                 330                 335

Ile Pro Pro Pro Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr
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340 345 350

Thr Ile Leu Thr Ile Ile Thr Asp Ser Arg Ala Gly Glu Glu Gly Ser
355 360 365

Ile Arg Ala Val Asp His Ala Val Ile Gly Gly Val Val Ala Val Val
370 375 380

Val Phe Ala Met Leu Cys Leu Leu Ile Ile Leu Gly Arg Tyr Phe Ala
385 390 395 400

Arg His Lys Gly Thr Tyr Phe Thr His Glu Ala Lys Gly Ala Asp Asp
405 410 415

Ala Ala Asp Ala Asp Thr Ala Ile Ile Asn Ala Glu Gly Gly Gln Asn
420 425 430

Asn Ser Glu Glu Lys Lys Glu Tyr Phe Ile
435 440

<210> 111
<211> 442
<212> PRT
<213> Homo sapiens

<400> 111
Met Ala Ser Val Val Leu Pro Ser Gly Ser Gln Cys Ala Ala Ala Ala
1 5 10 15

Ala Ala Ala Ala Pro Pro Gly Leu Arg Leu Arg Leu Leu Leu Leu Leu
20 25 30

Phe Ser Ala Ala Ala Leu Ile Pro Thr Gly Asp Gly Gln Asn Leu Phe
35 40 45

Thr Lys Asp Val Thr Val Ile Glu Gly Glu Val Ala Thr Ile Ser Cys
50 55 60

Gln Val Asn Lys Ser Asp Asp Ser Val Ile Gln Leu Leu Asn Pro Asn
65 70 75 80

Arg Gln Thr Ile Tyr Phe Arg Asp Phe Arg Pro Leu Lys Asp Ser Arg
85 90 95

Phe Gln Leu Leu Asn Phe Ser Ser Ser Glu Leu Lys Val Ser Leu Thr
100 105 110

Asn Val Ser Ile Ser Asp Glu Gly Arg Tyr Phe Cys Gln Leu Tyr Thr
115 120 125

Asp Pro Pro Gln Glu Ser Tyr Thr Thr Ile Thr Val Leu Val Pro Pro
130 135 140

Arg Asn Leu Met Ile Asp Ile Gln Lys Asp Thr Ala Val Glu Gly Glu
145 150 155 160

Glu Ile Glu Val Asn Cys Thr Ala Met Ala Ser Lys Pro Ala Thr Thr
165 170 175

Ile Arg Trp Phe Lys Gly Asn Thr Glu Leu Lys Gly Lys Ser Glu Val
180 185 190

Glu Glu Trp Ser Asp Met Tyr Thr Val Thr Ser Gln Leu Met Leu Lys
195 200 205

Val His Lys Glu Asp Asp Gly Val Pro Val Ile Cys Gln Val Glu His
210 215 220

Pro Ala Val Thr Gly Asn Leu Gln Thr Gln Arg Tyr Leu Glu Val Gln
225 230 235 240

Tyr Lys Pro Gln Val His Ile Gln Met Thr Tyr Pro Leu Gln Gly Leu
245 250 255

Thr Arg Glu Gly Asp Ala Leu Glu Leu Thr Cys Glu Ala Ile Gly Lys
260 265 270

Pro Gln Pro Val Met Val Thr Trp Val Arg Val Asp Asp Glu Met Pro
275 280 285

Gln His Ala Val Leu Ser Gly Pro Asn Leu Phe Ile Asn Asn Leu Asn
290 295 300

Lys Thr Asp Asn Gly Thr Tyr Arg Cys Glu Ala Ser Asn Ile Val Gly
305 310 315 320

Lys Ala His Ser Asp Tyr Met Leu Tyr Val Tyr Asp Pro Pro Thr Thr
325 330 335

Ile Pro Pro Pro Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr
340 345 350

Thr Ile Leu Thr Ile Ile Thr Asp Ser Arg Ala Gly Glu Glu Gly Ser
355 360 365

Ile Arg Ala Val Asp His Ala Val Ile Gly Gly Val Val Ala Val Val
370 375 380

Val Phe Ala Met Leu Cys Leu Leu Ile Ile Leu Gly Arg Tyr Phe Ala
385 390 395 400

Arg His Lys Gly Thr Tyr Phe Thr His Glu Ala Lys Gly Ala Asp Asp
405 410 415

Ala Ala Asp Ala Asp Thr Ala Ile Ile Asn Ala Glu Gly Gly Gln Asn
420 425 430

Asn Ser Glu Glu Lys Lys Glu Tyr Phe Ile
435 440

<210> 112
<211> 445

<212> PRT
<213> Mus musculus

<400> 112
Met Ala Ser Ala Val Leu Pro Ser Gly Ser Gln Cys Ala Ala Ala Ala
1 5 10 15

Ala Val Ala Ala Ala Ala Ala Pro Pro Gly Leu Arg Leu Arg Leu Leu
20 25 30

Leu Leu Leu Leu Ser Ala Ala Ala Leu Ile Pro Thr Gly Asp Gly Gln
35 40 45

Asn Leu Phe Thr Lys Asp Val Thr Val Ile Glu Gly Glu Val Ala Thr
50 55 60

Ile Ser Cys Gln Val Asn Lys Ser Asp Asp Ser Val Ile Gln Leu Leu
65 70 75 80

Asn Pro Asn Arg Gln Thr Ile Tyr Phe Arg Asp Phe Arg Pro Leu Lys
85 90 95

Asp Ser Arg Phe Gln Leu Leu Asn Phe Ser Ser Ser Glu Leu Lys Val
100 105 110

Ser Leu Thr Asn Val Ser Ile Ser Asp Glu Gly Arg Tyr Phe Cys Gln
115 120 125

Leu Tyr Thr Asp Pro Pro Gln Glu Ser Tyr Thr Thr Ile Thr Val Leu
130 135 140

Val Pro Pro Arg Asn Leu Met Ile Asp Ile Gln Lys Asp Thr Ala Val
145 150 155 160

Glu Gly Glu Glu Ile Glu Val Asn Cys Thr Ala Met Ala Ser Lys Pro
165 170 175

Ala Thr Thr Ile Arg Trp Phe Lys Gly Asn Lys Glu Leu Lys Gly Lys
180 185 190

Ser Glu Val Glu Glu Trp Ser Asp Met Tyr Thr Val Thr Ser Gln Leu
195 200 205

Met Leu Lys Val His Lys Glu Asp Asp Gly Val Pro Val Ile Cys Gln
210 215 220

Val Glu His Pro Ala Val Thr Gly Asn Leu Gln Thr Gln Arg Tyr Leu
225 230 235 240

Glu Val Gln Tyr Lys Pro Gln Val His Ile Gln Met Thr Tyr Pro Leu
245 250 255

Gln Gly Leu Thr Arg Glu Gly Asp Ala Phe Glu Leu Thr Cys Glu Ala
260 265 270

Ile Gly Lys Pro Gln Pro Val Met Val Thr Trp Val Arg Val Asp Asp
275 280 285

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Glu Met Pro Gln His Ala Val Leu Ser Gly Pro Asn Leu Phe Ile Asn
    290                 295                 300

Asn Leu Asn Lys Thr Asp Asn Gly Thr Tyr Arg Cys Glu Ala Ser Asn
305                 310                 315                 320

Ile Val Gly Lys Ala His Ser Asp Tyr Met Leu Tyr Val Tyr Asp Pro
                325                 330                 335

Pro Thr Thr Ile Pro Pro Pro Thr Thr Thr Thr Thr Thr Thr Thr Thr
            340                 345                 350

Thr Thr Thr Thr Ile Leu Thr Ile Ile Thr Asp Ser Arg Ala Gly Glu
        355                 360                 365

Glu Gly Thr Ile Gly Ala Val Asp His Ala Val Ile Gly Gly Val Val
    370                 375                 380

Ala Val Val Val Phe Ala Met Leu Cys Leu Leu Ile Ile Leu Gly Arg
385                 390                 395                 400

Tyr Phe Ala Arg His Lys Gly Thr Tyr Phe Thr His Glu Ala Lys Gly
                405                 410                 415

Ala Asp Asp Ala Ala Asp Ala Asp Thr Ala Ile Ile Asn Ala Glu Gly
            420                 425                 430

Gly Gln Asn Asn Ser Glu Glu Lys Lys Glu Tyr Phe Ile
        435                 440                 445


<210> 113
<211> 494
<212> PRT
<213> Mus musculus

<400> 113
Cys His Asp Trp Ser Leu Leu Thr Pro Pro Pro Ala His Leu Ile Ser
  1               5                  10                  15

Ile Ser Leu Ala Val Arg Ser Gly Ser Gly Gly Ser His Arg Arg Gln
             20                  25                  30

Ser Glu Ala Gly Ala Arg His Gly Glu Cys Cys Ala Ala Glu Arg Ile
         35                  40                  45

Pro Val Cys Gly Gly Thr Ala Val Ala Ala Ala Ala Ala Pro Pro Gly
     50                  55                  60

Leu Arg Leu Arg Leu Leu Leu Leu Leu Leu Ser Ala Ala Ala Leu Ile
 65                  70                  75                  80

Pro Thr Gly Asp Gly Gln Asn Leu Phe Thr Lys Asp Val Thr Val Ile
                 85                  90                  95

Glu Gly Glu Val Ala Thr Ile Ser Cys Gln Val Asn Lys Ser Asp Asp
```

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            100                 105                 110

Ser Val Ile Gln Leu Leu Asn Pro Asn Arg Gln Thr Ile Tyr Phe Arg
        115                 120                 125

Asp Phe Arg Pro Leu Lys Asp Ser Arg Phe Gln Leu Leu Asn Phe Ser
    130                 135                 140

Ser Ser Glu Leu Lys Val Ser Leu Thr Asn Val Ser Ile Ser Asp Glu
145                 150                 155                 160

Gly Arg Tyr Phe Cys Gln Leu Tyr Thr Asp Pro Pro Gln Glu Ser Tyr
                165                 170                 175

Thr Thr Ile Thr Val Leu Val Pro Pro Arg Asn Leu Met Ile Asp Ile
            180                 185                 190

Gln Lys Asp Thr Ala Val Glu Gly Glu Glu Ile Glu Val Asn Cys Thr
        195                 200                 205

Ala Met Ala Ser Lys Pro Ala Thr Thr Ile Arg Trp Phe Lys Gly Asn
    210                 215                 220

Lys Glu Leu Lys Gly Lys Ser Glu Val Glu Glu Trp Ser Asp Met Tyr
225                 230                 235                 240

Thr Val Thr Ser Gln Leu Met Leu Lys Val His Lys Glu Asp Asp Gly
                245                 250                 255

Val Pro Val Ile Cys Gln Val Glu His Pro Ala Val Thr Gly Asn Leu
            260                 265                 270

Gln Thr Gln Arg Tyr Leu Glu Val Gln Tyr Lys Pro Gln Val His Ile
        275                 280                 285

Gln Met Thr Tyr Pro Leu Gln Gly Leu Thr Arg Glu Gly Asp Ala Phe
    290                 295                 300

Glu Leu Thr Cys Glu Ala Ile Gly Lys Pro Gln Pro Val Met Val Thr
305                 310                 315                 320

Trp Val Arg Val Asp Asp Glu Met Pro Gln His Ala Val Leu Ser Gly
                325                 330                 335

Pro Asn Leu Phe Ile Asn Asn Leu Asn Lys Thr Asp Asn Gly Thr Tyr
            340                 345                 350

Arg Cys Glu Ala Ser Asn Ile Val Gly Lys Ala His Ser Asp Tyr Met
        355                 360                 365

Leu Tyr Val Tyr Asp Pro Pro Thr Thr Ile Pro Pro Pro Thr Thr Thr
    370                 375                 380

Thr Thr Thr Thr Thr Thr Thr Thr Thr Thr Ile Leu Thr Ile Ile Thr
385                 390                 395                 400

Asp Thr Thr Ala Thr Thr Glu Pro Ala Val His Asp Ser Arg Ala Gly
```

405 410 415

Glu Glu Gly Thr Ile Gly Ala Val Asp His Ala Val Ile Gly Gly Val
420 425 430

Val Ala Val Val Val Phe Ala Met Leu Cys Leu Leu Ile Ile Leu Gly
435 440 445

Arg Tyr Phe Ala Arg His Lys Gly Thr Tyr Phe Thr His Glu Ala Lys
450 455 460

Gly Ala Asn Asp Ala Ala Asp Ala Asp Thr Ala Ile Ile Asn Ala Glu
465 470 475 480

Gly Gly Gln Asn Asn Ser Glu Glu Lys Lys Glu Tyr Phe Ile
485 490

<210> 114
<211> 63
<212> PRT
<213> Homo sapiens

<400> 114
Leu Glu Gly Glu Ser Val Thr Leu Thr Cys Pro Ala Ser Gly Asp Pro
1 5 10 15

Val Pro Asn Ile Thr Trp Leu Lys Asp Gly Lys Pro Leu Pro Glu Ser
20 25 30

Arg Val Val Ala Ser Gly Ser Thr Leu Thr Ile Lys Asn Val Ser Leu
35 40 45

Glu Asp Ser Gly Leu Tyr Thr Cys Val Ala Arg Asn Ser Val Gly
50 55 60

<210> 115
<211> 63
<212> PRT
<213> Homo sapiens

<400> 115
Leu Glu Gly Glu Ser Val Thr Leu Thr Cys Pro Ala Ser Gly Asp Pro
1 5 10 15

Val Pro Asn Ile Thr Trp Leu Lys Asp Gly Lys Pro Leu Pro Glu Ser
20 25 30

Arg Val Val Ala Ser Gly Ser Thr Leu Thr Ile Lys Asn Val Ser Leu
35 40 45

Glu Asp Ser Gly Leu Tyr Thr Cys Val Ala Arg Asn Ser Val Gly
50 55 60

<210> 116

<211> 86
<212> PRT
<213> Homo sapiens

<400> 116
Pro Pro Ser Val Thr Val Lys Glu Gly Glu Ser Val Thr Leu Ser Cys
1 5 10 15

Glu Ala Ser Gly Asn Pro Pro Pro Thr Val Thr Trp Tyr Lys Gln Gly
20 25 30

Gly Lys Leu Leu Ala Glu Ser Gly Arg Phe Ser Val Ser Arg Ser Gly
35 40 45

Gly Asn Ser Thr Leu Thr Ile Ser Asn Val Thr Pro Glu Asp Ser Gly
50 55 60

Thr Tyr Thr Cys Ala Ala Thr Asn Ser Ser Gly Ser Ala Ser Ser Gly
65 70 75 80

Thr Thr Leu Thr Val Leu
85

<210> 117
<211> 86
<212> PRT
<213> Homo sapiens

<400> 117
Pro Pro Ser Val Thr Val Lys Glu Gly Glu Ser Val Thr Leu Ser Cys
1 5 10 15

Glu Ala Ser Gly Asn Pro Pro Pro Thr Val Thr Trp Tyr Lys Gln Gly
20 25 30

Gly Lys Leu Leu Ala Glu Ser Gly Arg Phe Ser Val Ser Arg Ser Gly
35 40 45

Gly Asn Ser Thr Leu Thr Ile Ser Asn Val Thr Pro Glu Asp Ser Gly
50 55 60

Thr Tyr Thr Cys Ala Ala Thr Asn Ser Ser Gly Ser Ala Ser Ser Gly
65 70 75 80

Thr Thr Leu Thr Val Leu
85

<210> 118
<211> 86
<212> PRT
<213> Homo sapiens

<400> 118
Pro Pro Ser Val Thr Val Lys Glu Gly Glu Ser Val Thr Leu Ser Cys
1 5 10 15

```
Glu Ala Ser Gly Asn Pro Pro Pro Thr Val Thr Trp Tyr Lys Gln Gly
            20                  25                  30

Gly Lys Leu Leu Ala Glu Ser Gly Arg Phe Ser Val Ser Arg Ser Gly
        35                  40                  45

Gly Asn Ser Thr Leu Thr Ile Ser Asn Val Thr Pro Glu Asp Ser Gly
    50                  55                  60

Thr Tyr Thr Cys Ala Ala Thr Asn Ser Ser Gly Ser Ala Ser Ser Gly
65                  70                  75                  80

Thr Thr Leu Thr Val Leu
                85
```

<210> 119
<211> 68
<212> PRT
<213> Homo sapiens

<400> 119

```
Gly Glu Ser Val Thr Leu Thr Cys Ser Val Ser Gly Tyr Pro Pro Asp
  1               5                  10                  15

Pro Thr Val Thr Trp Leu Arg Asp Gly Lys Glu Ile Glu Leu Leu Gly
            20                  25                  30

Ser Ser Glu Ser Arg Val Ser Ser Gly Gly Arg Phe Ser Ile Ser Ser
        35                  40                  45

Leu Ser Leu Thr Ile Ser Ser Val Thr Pro Glu Asp Ser Gly Thr Tyr
    50                  55                  60

Thr Cys Val Val
65
```

<210> 120
<211> 68
<212> PRT
<213> Homo sapiens

<400> 120

```
Gly Glu Ser Val Thr Leu Thr Cys Ser Val Ser Gly Tyr Pro Pro Asp
  1               5                  10                  15

Pro Thr Val Thr Trp Leu Arg Asp Gly Lys Glu Ile Glu Leu Leu Gly
            20                  25                  30

Ser Ser Glu Ser Arg Val Ser Ser Gly Gly Arg Phe Ser Ile Ser Ser
        35                  40                  45

Leu Ser Leu Thr Ile Ser Ser Val Thr Pro Glu Asp Ser Gly Thr Tyr
    50                  55                  60
```

Thr Cys Val Val
65

<210> 121
<211> 19
<212> PRT
<213> Homo sapiens

<400> 121
Met Tyr Arg Tyr Lys His Arg Asp Glu Gly Ser Tyr His Thr His Glu
1 5 10 15

Pro Lys Gly

<210> 122
<211> 80
<212> PRT
<213> Homo sapiens

<400> 122
Ser Val Thr Leu Ser Cys Lys Ala Ser Gly Phe Thr Phe Ser Ser Tyr
1 5 10 15

Tyr Val Ser Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu
20 25 30

Gly Tyr Ile Gly Ser Asp Val Ser Tyr Ser Glu Ala Ser Tyr Lys Gly
35 40 45

Arg Val Thr Ile Ser Lys Asp Asn Ser Lys Asn Asp Val Ser Leu Thr
50 55 60

Ile Ser Asn Leu Arg Val Glu Asp Thr Gly Thr Tyr Tyr Cys Ala Val
65 70 75 80

<210> 123
<211> 523
<212> PRT
<213> Homo sapiens

<400> 123
Met Ser Arg Gln Phe Thr Cys Lys Ser Gly Ala Ala Ala Lys Gly Gly
1 5 10 15

Phe Ser Gly Cys Ser Ala Val Leu Ser Gly Gly Ser Ser Ser Ser Phe
20 25 30

Arg Ala Gly Ser Lys Gly Leu Ser Gly Gly Phe Gly Ser Arg Ser Leu
35 40 45

```
Tyr Ser Leu Gly Gly Val Arg Ser Leu Asn Val Ala Ser Gly Ser Gly
     50                  55                  60

Lys Ser Gly Gly Tyr Gly Phe Gly Arg Gly Arg Ala Ser Gly Phe Ala
 65                  70                  75                  80

Gly Ser Met Phe Gly Ser Val Ala Leu Gly Pro Val Cys Pro Thr Val
                 85                  90                  95

Cys Pro Pro Gly Gly Ile His Gln Val Thr Val Asn Glu Ser Leu Leu
            100                 105                 110

Ala Pro Leu Asn Val Glu Leu Asp Pro Glu Ile Gln Lys Val Arg Ala
        115                 120                 125

Gln Glu Arg Glu Gln Ile Lys Ala Leu Asn Asn Lys Phe Ala Ser Phe
    130                 135                 140

Ile Asp Lys Val Arg Phe Leu Glu Gln Gln Asn Gln Val Leu Glu Thr
145                 150                 155                 160

Lys Trp Glu Leu Leu Gln Gln Leu Asp Leu Asn Asn Cys Lys Asn Asn
                165                 170                 175

Leu Glu Pro Ile Leu Glu Gly Tyr Ile Ser Asn Leu Arg Lys Gln Leu
            180                 185                 190

Glu Thr Leu Ser Gly Asp Arg Val Arg Leu Asp Ser Glu Leu Arg Asn
        195                 200                 205

Val Arg Asp Val Val Glu Asp Tyr Lys Lys Arg Tyr Glu Glu Glu Ile
    210                 215                 220

Asn Lys Arg Thr Ala Ala Glu Asn Glu Phe Val Leu Leu Lys Lys Asp
225                 230                 235                 240

Val Asp Ala Ala Tyr Ala Asn Lys Val Glu Leu Gln Ala Lys Val Glu
                245                 250                 255

Ser Met Asp Gln Glu Ile Lys Phe Phe Arg Cys Leu Phe Glu Ala Glu
            260                 265                 270

Ile Thr Gln Ile Gln Ser His Ile Ser Asp Met Ser Val Ile Leu Ser
        275                 280                 285

Met Asp Asn Asn Arg Asn Leu Asp Leu Asp Ser Ile Ile Asp Glu Val
    290                 295                 300

Arg Thr Gln Tyr Glu Glu Ile Ala Leu Lys Ser Lys Ala Glu Ala Glu
305                 310                 315                 320

Ala Leu Tyr Gln Thr Lys Phe Gln Glu Leu Gln Leu Ala Ala Gly Arg
                325                 330                 335

His Gly Asp Asp Leu Lys Asn Thr Lys Asn Glu Ile Ser Glu Leu Thr
            340                 345                 350
```

```
Arg Leu Ile Gln Arg Ile Arg Ser Glu Ile Glu Asn Val Lys Lys Gln
        355                 360                 365

Ala Ser Asn Leu Glu Thr Ala Ile Ala Asp Ala Glu Gln Arg Gly Asp
    370                 375                 380

Asn Ala Leu Lys Asp Ala Arg Ala Lys Leu Asp Glu Leu Glu Gly Ala
385                 390                 395                 400

Leu His Gln Ala Lys Glu Glu Leu Ala Arg Met Leu Arg Glu Tyr Gln
                405                 410                 415

Glu Leu Met Ser Leu Lys Leu Ala Leu Asp Met Glu Ile Ala Thr Tyr
            420                 425                 430

Arg Lys Leu Leu Glu Ser Glu Glu Cys Arg Met Ser Gly Glu Phe Pro
        435                 440                 445

Ser Pro Val Ser Ile Ser Ile Ile Ser Ser Thr Ser Gly Gly Ser Val
    450                 455                 460

Tyr Gly Phe Arg Pro Ser Met Val Ser Gly Gly Tyr Val Ala Asn Ser
465                 470                 475                 480

Ser Asn Cys Ile Ser Gly Val Cys Ser Val Arg Gly Gly Glu Gly Arg
                485                 490                 495

Ser Arg Gly Ser Ala Asn Asp Tyr Lys Asp Thr Leu Gly Lys Gly Ser
            500                 505                 510

Ser Leu Ser Ala Pro Ser Lys Lys Thr Ser Arg
        515                 520


<210> 124
<211> 441
<212> PRT
<213> Homo sapiens

<400> 124
Met Phe Gly Ser Val Ala Leu Gly Pro Val Cys Pro Thr Val Cys Pro
  1               5                  10                  15

Pro Gly Gly Ile His Gln Val Thr Val Asn Glu Ser Leu Leu Ala Pro
             20                  25                  30

Leu Asn Val Glu Leu Asp Pro Glu Ile Gln Lys Val Arg Ala Gln Glu
         35                  40                  45

Arg Glu Gln Ile Lys Ala Leu Asn Asn Lys Phe Ala Ser Phe Ile Asp
     50                  55                  60

Lys Val Arg Phe Leu Glu Gln Gln Asn Gln Val Leu Glu Thr Lys Trp
 65                  70                  75                  80

Glu Leu Leu Gln Gln Leu Asp Leu Asn Asn Cys Lys Asn Asn Leu Glu
                85                  90                  95
```

Pro Ile Leu Glu Gly Tyr Ile Ser Asn Leu Arg Lys Gln Leu Glu Thr
100 105 110

Leu Ser Gly Asp Arg Val Arg Leu Asp Ser Glu Leu Arg Asn Val Arg
115 120 125

Asp Val Val Glu Asp Tyr Lys Lys Arg Tyr Glu Glu Glu Ile Asn Lys
130 135 140

Arg Thr Ala Ala Glu Asn Glu Phe Val Leu Leu Lys Lys Asp Val Asp
145 150 155 160

Ala Ala Tyr Ala Asn Lys Val Glu Leu Gln Ala Lys Val Glu Ser Met
165 170 175

Asp Gln Glu Ile Lys Phe Phe Arg Cys Leu Phe Glu Ala Glu Ile Thr
180 185 190

Gln Ile Gln Ser His Ile Ser Asp Met Ser Val Ile Leu Ser Met Asp
195 200 205

Asn Asn Arg Asn Leu Asp Leu Asp Ser Ile Ile Asp Glu Val Arg Thr
210 215 220

Gln Tyr Glu Glu Ile Ala Leu Lys Ser Lys Ala Glu Ala Glu Ala Leu
225 230 235 240

Tyr Gln Thr Lys Phe Gln Glu Leu Gln Leu Ala Ala Gly Arg His Gly
245 250 255

Asp Asp Leu Lys Asn Thr Lys Asn Glu Ile Ser Glu Leu Thr Arg Leu
260 265 270

Ile Gln Arg Ile Arg Ser Glu Ile Glu Asn Val Lys Lys Gln Ala Ser
275 280 285

Asn Leu Glu Thr Ala Ile Ala Asp Ala Glu Gln Arg Gly Asp Asn Ala
290 295 300

Leu Lys Asp Ala Arg Ala Lys Leu Asp Glu Leu Glu Gly Ala Leu His
305 310 315 320

Gln Ala Lys Glu Glu Leu Ala Arg Met Leu Arg Glu Tyr Gln Glu Leu
325 330 335

Met Ser Leu Lys Leu Ala Leu Asp Met Glu Ile Ala Thr Tyr Arg Lys
340 345 350

Leu Leu Glu Ser Glu Glu Cys Arg Met Ser Gly Glu Phe Pro Ser Pro
355 360 365

Val Ser Ile Ser Ile Ile Ser Ser Thr Ser Gly Gly Ser Val Tyr Gly
370 375 380

Phe Arg Pro Ser Met Val Ser Gly Gly Tyr Val Ala Asn Ser Ser Asn
385 390 395 400

```
Cys Ile Ser Gly Val Cys Ser Val Arg Gly Gly Glu Gly Arg Ser Arg
                405                 410                 415

Gly Ser Ala Asn Asp Tyr Lys Asp Thr Leu Gly Lys Gly Ser Ser Leu
            420                 425                 430

Ser Ala Pro Ser Lys Lys Thr Ser Arg
        435                 440
```

<210> 125
<211> 524
<212> PRT
<213> Mus musculus

<400> 125

```
Met Ser Arg Gln Phe Thr Cys Lys Ser Gly Ala Ser Asn Arg Gly Phe
  1               5                  10                  15

Ser Gly Cys Ser Ala Val Leu Ser Gly Gly Ser Ser Ser Ser Tyr Arg
             20                  25                  30

Ala Gly Gly Lys Gly Leu Ser Gly Gly Phe Gly Ser Arg Ser Leu Tyr
         35                  40                  45

Ser Leu Gly Gly Gly Arg Ser Ile Thr Leu Asn Met Ala Ser Gly Ser
     50                  55                  60

Gly Lys Asn Gly Gly Phe Gly Phe Gly Arg Asn Arg Ala Ser Gly Phe
 65                  70                  75                  80

Ala Gly Ser Ile Phe Gly Ser Val Ala Leu Gly Pro Val Cys Pro Ala
                 85                  90                  95

Val Cys Pro Pro Gly Gly Ile His Gln Val Thr Val Asn Glu Ser Leu
            100                 105                 110

Leu Ala Pro Leu Asn Val Glu Leu Asp Pro Glu Ile Gln Lys Val Arg
        115                 120                 125

Ala Gln Glu Arg Glu Gln Ile Lys Ala Leu Asn Asn Lys Phe Ala Ser
    130                 135                 140

Phe Ile Asp Lys Val Arg Phe Leu Glu Gln Gln Asn Gln Val Leu Gln
145                 150                 155                 160

Thr Lys Trp Glu Leu Leu Gln Gln Leu Asp Leu Asn Asn Cys Lys Asn
                165                 170                 175

Asn Leu Glu Pro Ile Leu Glu Gly His Ile Ser Asn Met Arg Lys Gln
            180                 185                 190

Leu Glu Thr Leu Ser Gly Asp Arg Val Arg Leu Asp Ser Glu Leu Arg
        195                 200                 205

Asn Val Arg Asp Val Val Glu Asp Tyr Lys Lys Lys Tyr Glu Glu Glu
```

```
    210                 215                 220

Ile Asn Arg Arg Thr Ala Ala Glu Asn Glu Phe Val Leu Leu Lys Lys
225                 230                 235                 240

Asp Val Asp Ala Ala Tyr Ala Asn Lys Val Glu Leu Gln Ala Lys Val
                245                 250                 255

Asp Thr Met Asp Gln Asp Ile Lys Phe Phe Lys Cys Leu Phe Glu Ala
            260                 265                 270

Glu Met Ala Gln Ile Gln Ser His Ile Ser Asp Met Ser Val Ile Leu
        275                 280                 285

Ser Met Asp Asn Asn Arg Asn Leu Asp Leu Asp Ser Ile Ile Asp Glu
    290                 295                 300

Val Arg Ala Gln Tyr Glu Glu Ile Ala Leu Lys Ser Lys Ala Glu Ala
305                 310                 315                 320

Glu Ala Leu Tyr Gln Thr Lys Phe Gln Glu Leu Gln Leu Ala Ala Gly
                325                 330                 335

Arg His Gly Asp Asp Leu Lys Asn Thr Lys Asn Glu Ile Thr Glu Leu
            340                 345                 350

Thr Arg Phe Ile Gln Arg Leu Arg Ser Glu Ile Glu Asn Ala Lys Lys
        355                 360                 365

Gln Ala Ser Asn Leu Glu Thr Ala Ile Ala Asp Ala Glu Gln Arg Gly
    370                 375                 380

Asp Ser Ala Leu Lys Asp Ala Arg Ala Lys Leu Asp Glu Leu Glu Gly
385                 390                 395                 400

Ala Leu His Gln Ala Lys Glu Glu Leu Ala Arg Met Leu Arg Glu Tyr
                405                 410                 415

Gln Glu Leu Met Ser Leu Lys Leu Ala Leu Asp Met Glu Ile Ala Thr
            420                 425                 430

Tyr Arg Lys Leu Leu Glu Ser Glu Glu Cys Arg Met Ser Gly Glu Tyr
        435                 440                 445

Ser Ser Pro Val Ser Ile Ser Ile Ile Ser Ser Thr Ser Gly Ser Gly
    450                 455                 460

Gly Tyr Gly Phe Arg Pro Ser Thr Val Ser Gly Gly Tyr Val Ala Asn
465                 470                 475                 480

Ser Thr Ser Cys Ile Ser Gly Val Cys Ser Val Arg Gly Gly Glu Asn
                485                 490                 495

Arg Ser Arg Gly Ser Ala Ser Asp Tyr Lys Asp Thr Leu Thr Lys Gly
            500                 505                 510

Ser Ser Leu Ser Thr Pro Ser Lys Lys Gly Gly Arg
```

515 520

<210> 126
<211> 336
<212> PRT
<213> Homo sapiens

<400> 126
Met Phe Gly Ser Val Ala Leu Gly Pro Val Cys Pro Thr Val Cys Pro
1 5 10 15

Pro Gly Gly Ile His Gln Val Thr Val Asn Glu Ser Leu Leu Ala Pro
20 25 30

Leu Asn Val Glu Leu Asp Pro Glu Ile Gln Lys Val Arg Ala Gln Glu
35 40 45

Arg Glu Gln Ile Lys Ala Leu Asn Asn Lys Phe Ala Ser Phe Ile Asp
50 55 60

Lys Val Arg Phe Leu Glu Gln Gln Asn Gln Val Leu Glu Thr Lys Trp
65 70 75 80

Glu Leu Leu Gln Gln Leu Asp Leu Asn Asn Cys Lys Asn Asn Leu Glu
85 90 95

Pro Ile Leu Glu Gly Tyr Ile Ser Asn Leu Arg Lys Gln Leu Glu Thr
100 105 110

Leu Ser Gly Asp Arg Val Arg Leu Asp Ser Glu Leu Arg Asn Val Arg
115 120 125

Asp Val Val Glu Asp Tyr Lys Lys Arg Tyr Glu Glu Glu Ile Asn Lys
130 135 140

Arg Thr Ala Ala Glu Asn Glu Phe Val Leu Leu Lys Lys Asp Val Asp
145 150 155 160

Ala Ala Tyr Ala Asn Lys Val Glu Leu Gln Ala Lys Val Glu Ser Met
165 170 175

Asp Gln Glu Ile Lys Phe Phe Arg Cys Leu Phe Glu Ala Glu Ile Thr
180 185 190

Gln Ile Gln Ser His Ile Ser Asp Met Ser Val Ile Leu Ser Met Asp
195 200 205

Asn Asn Arg Asn Leu Asp Leu Asp Ser Ile Ile Asp Glu Val Arg Thr
210 215 220

Gln Tyr Glu Glu Ile Ala Leu Lys Ser Lys Ala Glu Ala Glu Ala Leu
225 230 235 240

Tyr Gln Thr Lys Phe Gln Glu Leu Gln Leu Ala Ala Gly Arg His Gly
245 250 255

Asp Asp Leu Lys Asn Thr Lys Leu Gly Glu Ile Pro Pro Cys Thr His
260 265 270

Pro Ile Asn Ser Leu Ala Val Val Pro Gln Leu His His Gln Pro Arg
275 280 285

Ser Trp Leu Pro Ala Phe Leu Leu Cys Pro Ala Ser Ser Ala Val Ala
290 295 300

Asn Tyr Ser Ala Gly Leu Pro Gly Ser Leu Pro Lys Ala Pro His Thr
305 310 315 320

Leu Gly Pro Ser Ile Val Pro Ala Tyr Ala Arg Ser Trp Leu Cys Val
325 330 335

<210> 127
<211> 551
<212> PRT
<213> Homo sapiens

<400> 127
Met Ser Arg Gln Ser Ser Ile Thr Phe Gln Ser Gly Ser Arg Arg Gly
1 5 10 15

Phe Ser Thr Thr Ser Ala Ile Thr Pro Ala Ala Gly Arg Ser Arg Phe
20 25 30

Ser Ser Val Ser Val Ala Arg Ser Ala Ala Gly Ser Gly Gly Leu Gly
35 40 45

Arg Ile Ser Ser Ala Gly Ala Ser Phe Gly Ser Arg Ser Leu Tyr Asn
50 55 60

Leu Gly Gly Ala Lys Arg Val Ser Ile Asn Gly Cys Gly Ser Ser Cys
65 70 75 80

Arg Ser Gly Phe Gly Gly Arg Ala Ser Asn Gly Phe Gly Val Asn Ser
85 90 95

Gly Phe Gly Tyr Gly Gly Gly Val Gly Gly Gly Phe Ser Gly Pro Ser
100 105 110

Phe Pro Val Cys Pro Pro Gly Gly Ile Gln Glu Val Thr Val Asn Gln
115 120 125

Ser Leu Leu Thr Pro Leu His Leu Gln Ile Asp Pro Thr Ile Gln Arg
130 135 140

Val Arg Ala Glu Glu Arg Glu Gln Ile Lys Thr Leu Asn Asn Lys Phe
145 150 155 160

Ala Ser Phe Ile Asp Lys Val Arg Phe Leu Glu Gln Gln Asn Lys Val
165 170 175

Leu Glu Thr Lys Trp Ala Leu Leu Gln Glu Gln Gly Ser Arg Thr Val
180 185 190

Arg Gln Asn Leu Glu Pro Leu Phe Asp Ser Tyr Thr Ser Glu Leu Arg
195 200 205

Arg Gln Leu Glu Ser Ile Thr Thr Glu Arg Gly Arg Leu Glu Ala Glu
210 215 220

Leu Arg Asn Met Gln Asp Val Val Glu Asp Phe Lys Val Arg Tyr Glu
225 230 235 240

Asp Glu Ile Asn Lys Arg Thr Ala Ala Glu Asn Glu Phe Val Ala Leu
245 250 255

Lys Lys Asp Val Asp Ala Ala Tyr Met Asn Lys Val Glu Leu Glu Ala
260 265 270

Lys Val Lys Ser Leu Pro Glu Glu Ile Asn Phe Ile His Ser Val Phe
275 280 285

Asp Ala Glu Leu Ser Gln Leu Gln Thr Gln Val Gly Asp Thr Ser Val
290 295 300

Val Leu Ser Met Asp Asn Asn Arg Asn Leu Asp Leu Asp Ser Ile Ile
305 310 315 320

Ala Glu Val Lys Ala Gln Tyr Glu Asp Ile Ala Asn Arg Ser Arg Ala
325 330 335

Glu Ala Glu Ser Trp Tyr Gln Thr Lys Tyr Glu Glu Leu Gln Val Thr
340 345 350

Ala Gly Arg His Gly Asp Asp Leu Arg Asn Thr Lys Gln Glu Ile Ser
355 360 365

Glu Met Asn Arg Met Ile Gln Arg Leu Arg Ala Glu Ile Asp Ser Val
370 375 380

Lys Lys Gln Cys Ser Ser Leu Gln Thr Ala Ile Ala Asp Ala Glu Gln
385 390 395 400

Arg Gly Glu Leu Ala Leu Lys Asp Ala Arg Ala Lys Leu Val Asp Leu
405 410 415

Glu Glu Ala Leu Gln Lys Ala Lys Gln Asp Met Ala Arg Leu Leu Arg
420 425 430

Glu Tyr Gln Glu Leu Met Asn Ile Lys Leu Ala Leu Asp Val Glu Ile
435 440 445

Ala Thr Tyr Arg Lys Leu Leu Glu Gly Glu Glu Cys Arg Leu Ser Gly
450 455 460

Glu Gly Val Ser Pro Val Asn Ile Ser Val Val Thr Ser Thr Leu Ser
465 470 475 480

Ser Gly Tyr Gly Arg Gly Ser Ser Ile Gly Gly Gly Asn Leu Gly Leu
485 490 495

Gly Gly Gly Ser Gly Tyr Ser Phe Thr Thr Ser Gly Gly His Ser Leu
500 505 510

Gly Ala Gly Leu Gly Gly Ser Gly Phe Ser Ala Thr Ser Asn Arg Gly
515 520 525

Leu Gly Gly Ser Gly Ser Ser Val Lys Phe Val Ser Thr Thr Ser Ser
530 535 540

Ser Gln Lys Ser Tyr Thr His
545 550

<210> 128
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 128
accaaatttg gtgaaggaga tt 22

<210> 129
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 129
caacaattcg tgtgatcaaa tatagtcctg 30

<210> 130
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 130
ccatcttcaa atccacaatg aa 22

<210> 131

<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 131
cagcggaaag acccagca 18

<210> 132
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 132
cgcccgttgg gacagactcc c 21

<210> 133
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 133
gatgtgaacg agtgtgagtc cttc 24

<210> 134
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 134
accaatgtca tcggaggctt 20

<210> 135
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 135
tcaaagccgt cagcacaggc aca 23

<210> 136
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 136
gatgtcctcg caggtcatca t 21

<210> 137
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 137
actaacggcg tctgtgtcaa 20

<210> 138
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 138
cctttggcta cagcctggac ttcact . 26

<210> 139
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 139
gtctgtgtcc acacagttga tg 22

<210> 140
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 140
tgctactacc tgcctggata tg 22

<210> 141
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 141
caagccatgt accttcctct gcaaaa 26

<210> 142
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 142
gacagctgca caggaaactg 20

<210> 143
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 143
ccccttgaca ttgatgagtg t 21

<210> 144
<211> 23
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 144
agatccccgc catctgtgcc aat 23

<210> 145
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 145
actcccgatc tggtttatgc 20

<210> 146
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 146
aataccgagg gctcctacct 20

<210> 147
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 147
acctgtccag ccggctacac cct 23

<210> 148
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 148
cattcattgt catctcgaca ca 22

<210> 149
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 149
gccctggcaa ctctaatatt g 21

<210> 150
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 150
cactgctacc ctgaaccaga ccattg 26

<210> 151
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 151
attcagacac aggttggtga ag 22

<210> 152
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 152
catgcatttc tgaccttgct 20

<210> 153
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 153
cccactcaaa gcttttcaag ggctct 26

<210> 154
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 154
gtcatgcagc ttttgctcat 20

<210> 155
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 155
ccacagtgac ttgccacatt 20

<210> 156
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 156
ccccatttgg agaatgcttt tatatca 27

<210> 157
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 157
agggcaggca gacttaacc 19

<210> 158
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 158
ctgtgaggat attgacgaat gc 22

<210> 159
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 159
tccacacact ccggcatctg tgg 23

<210> 160
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 160
agttccccag ggtgttgtag 20

<210> 161
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 161

ctgtgaggat attgacgaat gc 22

<210> 162
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 162
tccacacact ccggcatctg tgg 23

<210> 163
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 163
tagttcccca gggtgttgta g 21

<210> 164
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 164
tggaaatact ggtgatggaa ag 22

<210> 165
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer Sequence

<400> 165
tcaaccacac tttcttttat ggtcgtg 27

<210> 166
<211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 166
tcggggaggt tttaaagact t 21

<210> 167
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 167
ggctccaagt atggtatcat ca 22

<210> 168
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 168
tctgaagacc cctacgctca aggtgt 26

<210> 169
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 169
tgaagtagag gttttcgtgc at 22

<210> 170
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

Sequence

<400> 170
gtcgggcagg acctttact 19

<210> 171
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 171
tcctacagct aattctgcag ggcaca 26

<210> 172
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 172
tacgctttac tcccgtaagt ca 22

<210> 173
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 173
atgacagact gctgagcagc 20

<210> 174
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 174
aaggcctgaa ggtgcagacg gag 23

<210> 175
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 175
cgttggcaaa gagaagcat 19

<210> 176
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 176
atgacagact gctgagcagc 20

<210> 177
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 177
aaggcctgaa ggtgcagacg gag 23

<210> 178
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 178
cgttggcaaa gagaagcat 19

<210> 179
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 179
caccagccgt acaccactca 20

<210> 180
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 180
ccacgtccct gcccgcgtt 19

<210> 181
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 181
tcacaggcga cgagatgttc 20

<210> 182
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 182
aaatggaagt caataggcaa ca 22

<210> 183
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 183
aagacttctt gcctaaaacc tcatttaaaa 30

<210> 184
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 184
acacagcttt gaaccaatga at 22

<210> 185
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<213> Artificial Sequence

<220>
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Sequence

<400> 185
gtcctgatct gaacttggtt ca 22

<210> 186
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<220>
<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 186
cagacaacgt ctccattata caacatgaca 30

<210> 187
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<213> Artificial Sequence

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<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 187
ttaccattcc aaattgcagt tg 22

<210> 188

<211> 22
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<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 188
ttgagaaagg cagagaaatg aa 22

<210> 189
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<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 189
caataatgct gaaagtcatc aatgtaatca 30

<210> 190
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<223> Description of Artificial Sequence: PCR Primer
Sequence

<400> 190
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<210> 191
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<223> Description of Artificial Sequence: PCR Primer
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<400> 191
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<210> 192
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<223> Description of Artificial Sequence: PCR Primer
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Sequence

<400> 193
cgagctttcc aaatgtatca ag 22

<210> 194
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Sequence

<400> 194
ggataacggc acctacactt g 21

<210> 195
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<220>
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Sequence

<400> 195
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<210> 196
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Sequence

<400> 196
cagggtcgta gaccacaagt ac 22

<210> 197
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<220>
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Sequence

<400> 197
acatgtctgt catcctgtcc at 22

<210> 198
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<220>
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Sequence

<400> 198
cctagacctg gacagcatca ttgacg 26

<210> 199
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<220>
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Sequence

<400> 199
tcttcaaggc aatctcctca ta 22

<210> 200
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<212> DNA
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<220>
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Sequence

<400> 200
atcaggtgct agagaccaag tg 22

<210> 201
<211> 26
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<213> Artificial Sequence

<220>
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Sequence

<400> 201
cctcctacag cagctggact tgaaca 26

<210> 202
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<220>
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Sequence

<400> 202
ataaatgggc tccaggttct t 21

<210> 203
<211> 22
<212> DNA
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<220>
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Sequence

<400> 203
agctgtccct ggatattgag at 22

<210> 204
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
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Sequence

<400> 204
cacctaccgc aagctgctgg agg 23

<210> 205
<211> 22
<212> DNA
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<220>
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Sequence

<400> 205
tggtatattc tccggacatc ct 22